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Chinese & Southeast Asian Births in Massachusetts

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THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF HEALTH AND HUMAN SERVICES
MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Chinese and Southeast Asian Births in Massachusetts

**Bureau of Health Statistics, Research and Evaluation
Bureau of Family and Community Health**

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EXECUTIVE SUMMARY

Overview

Today, Asians constitute the most rapidly growing group in the Commonwealth. The Asian population in Massachusetts is rich in diversity of national origins, demographic characteristics, and health care needs.

The purpose of this report is to provide detailed information on Chinese and Southeast Asian infant and maternal health in Massachusetts. The information will prove useful for planning, implementing, and evaluating infant and maternal health programs for the Chinese and Southeast Asian communities in Massachusetts. The report has been developed by the Bureau of Health Statistics, Research and Evaluation, and the Bureau of Family and Community Health of the Massachusetts Department of Public Health. The South Cove Community Health Center in Boston has provided active and essential collaboration and consultation throughout the development of the report.

The report is organized into six chapters. In Chapter One, population trends and current socioeconomic data for Asians residing in Massachusetts are presented, including population growth since 1900, national origins of current residents, and social and demographic characteristics such as education and income levels. This chapter provides a context for understanding the birth data presented in following chapters. Chapter Two focuses on the number of Chinese and Southeast Asian births in Massachusetts, and the communities and hospitals in which those births occur. In order to reflect the diversity of the Chinese and Southeast Asian community, the data in this and all subsequent chapters are presented by national origin of mother. Chapter Three presents information on the demographic characteristics of Chinese and Southeast Asian mothers, including age, education, and marital status. Chapter Four profiles medical risk factors of Chinese and Southeast Asian mothers which may adversely affect pregnancy outcome. Chapter Five describes the prenatal care received by Chinese and Southeast mothers, in terms of adequacy, site, and prenatal care payment. Chapter Six examines low birthweight and other medical characteristics which may adversely affect infant health. The Appendixes provide detailed tables containing the data summarized in the text, and detailed data on Chinese and Southeast Asian births for the eight Massachusetts cities with the largest numbers of Asian births and the South Cove catchment area.

Population Growth and Diversity

From 1980 to 1990, the Asian population of Massachusetts grew by 194%, compared to overall state population growth of 5%. The growth rate of the Asian community in Massachusetts during the 1980s far outstripped the growth rate of other Massachusetts racial and ethnic groups.

Massachusetts' Asian population is striking in its diversity of national origins. Chinese constitute the single largest group of Asians in Massachusetts (37.5%), followed by Vietnamese (10.8%), Cambodians (9.8%), and Laotians, (3.0%).

The Asian population of Massachusetts is also diverse and strikingly different than the Massachusetts population as a whole in its educational and income characteristics. The proportion of Asians obtaining a college degree is much larger than for all Massachusetts residents; the proportion of Asians with low educational attainment is also above the state average. Similarly, data from the 1990 U.S. Census of population indicate that the Asian population has a poverty rate of 19.7%, over twice the statewide poverty rate of 8.9%; but the mean household income for Asians in Massachusetts was \$43,887, 11% higher than the overall Massachusetts mean income of \$39,445.

In order to reflect the diversity of Massachusetts' Asian population, this report analyzes maternal and infant health and health care characteristics of Chinese and Southeast Asian births in Massachusetts by focusing on nine different national origin groups: Chinese mothers born in the People's Republic of China, Taiwan, Hong Kong, Vietnam, the United States, and other countries, and Cambodians, Vietnamese, and Laotians. As the report will make clear, the maternal and infant health characteristics of these nine groups differ greatly, and any assessment of health risks and access to health care must reflect this diversity.

Demographics of Chinese and Southeast Asian Mothers

The demographic characteristics of Chinese mothers giving birth in Massachusetts from 1987 through 1990 differed substantially from the demographic characteristics of Vietnamese, Cambodian, and Laotian mothers. The demographic characteristics of both Chinese and Southeast Asian mothers also differed substantially from those of white non-Hispanic mothers.

Chinese mothers were less likely to be teenagers (1% of Chinese mothers) and more likely to be age 30 or older (55.8%) than were Southeast Asian or white non-Hispanic mothers. In contrast, Southeast Asian mothers were more likely to be teenagers (14.7%) and less likely to be age 30 or older (29.7%) than Chinese or white non-Hispanic mothers.

Contrasts existed among Chinese and Southeast Asian mothers in their levels of educational attainment. Chinese mothers ages 20 and older were much more likely to have graduated from college (54.4%) than Southeast Asian mothers (12.2%). In contrast, Southeast Asian mothers (70.1%) were more likely to have had less than 12th grade education as compared to Chinese mothers (24.7%). It is important to note that the educational attainments of Chinese mothers

varied substantially by their place of birth, with much higher proportions of women born in Taiwan and the United States having had attended college than other Chinese women or white non-Hispanic women.

Medical Characteristics of Chinese and Southeast Asian Mothers

Chinese mothers (53.1%) were somewhat less likely than Southeast Asian (61.6%) or white non-Hispanic mothers (62.7%) to have had two or more pregnancies. These differences were even greater for higher numbers of pregnancies, with Chinese mothers markedly less likely to have had four or more pregnancies.

Southeast Asian infants (10.6%) were much less likely to have been delivered by Caesarean section than white non-Hispanic infants (23.8%); and Chinese infants were slightly less likely (19.6%).

Chinese and Southeast Asian mothers were much more likely to report having had hepatitis B than white non-Hispanic mothers. Rates of anemia were highest for Southeast Asian mothers.

Prenatal Care

Southeast Asian mothers (50.2%) were much less likely to have received adequate prenatal care than were Chinese (82.2%) or white non-Hispanic mothers (85.9%). Southeast Asian mothers (33.6%) were also much less likely to have had prenatal care paid for by private insurance than Chinese (73.2%) or white non-Hispanic (79.2%) mothers.

The largest proportions of Chinese, Southeast Asian, and white non-Hispanic mothers obtained prenatal care in physicians' private offices. However, Chinese mothers were also frequent users of community health centers and HMOs, and Southeast Asian mothers were frequent users of hospital clinics for prenatal care.

Health Risks and Birthweight

Chinese infants (4.2%) were less likely and Southeast Asian infants (7.6%) were substantially more likely to be born at low birthweight than were white non-Hispanic infants (5.0%). Similarly, Chinese infants (4.8%) were less likely and Southeast Asian infants (11.1%) were more likely to be born before the completion of 37th week of gestation.

Chinese infants had a relatively high incidence of jaundice reported on the birth certificate (5.1%), as compared with white non-Hispanic (3.5%) and Southeast Asian infants (1.9%).

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EVALUATION FORM

Demographic Profile of Asians in Massachusetts:1900-1990

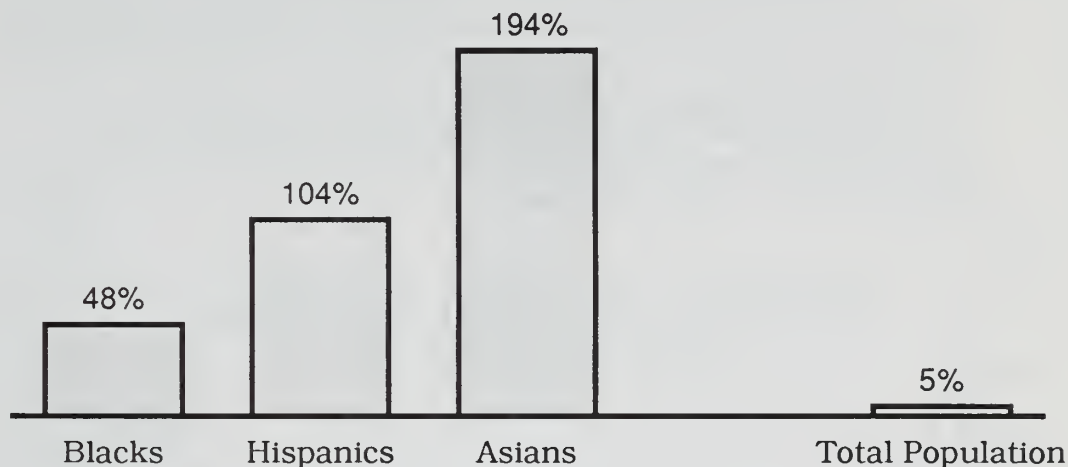


Background

The Asian community is the fastest growing population group in Massachusetts. From 1980 to 1990, overall population growth in Massachusetts was 5%, but the Asian community grew 194%. In comparison, the Hispanic population grew 104% during the 1980s, and the Black population grew 48%.

Percentage Population Increase

Massachusetts: 1980 to 1990



Source: U.S. Bureau of the Census

In actuality, there is no one Asian community—there are many diverse ethnic and cultural groups originating in Asia, even within the same country. The focus of this report is to present detailed birth data for Massachusetts residents of Asian ancestry, particularly Chinese and Southeast Asian ancestry, the largest Asian groups in Massachusetts. The goal of **Chinese and Southeast Asian Births in Massachusetts** is to better understand the similarities and differences in birth-related characteristics of these communities in order to understand more fully the specific needs of the subpopulations, and to improve the ability of the Department of Public Health to target culturally appropriate services.

Growth of Asian population: 1900 - 1990

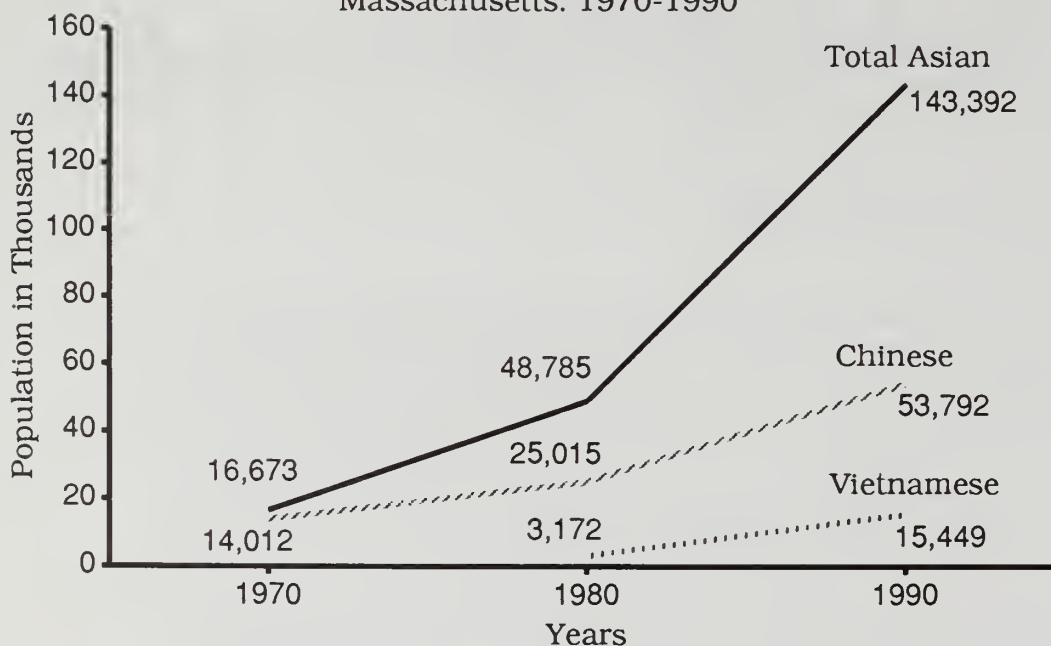
In 1900, the total Asian population in Massachusetts was 3,608, 82% of whom were Chinese. By 1950, the Asian population was 5,840, a growth of 62% in 50 years. The total state population increased by 67% during this same 50 years.

By 1970, the Asian population had increased to 16,673, representing 185% growth in 20 years. In comparison, the total state population grew 23% between 1950 and 1970.

The total Asian population in Massachusetts almost tripled from 1970 to 1980, from 16,673 to 48,785. During the 1980s, the total Asian population again almost tripled, increasing to 143,392 in 1990. (According to the US Census, Asians include Chinese, Filipino, Japanese, Asian Indian, Korean, Vietnamese, Cambodian, Hmong, Laotian, Thai and other Asians such as Burmese, Pakistani and 17 other groups.)

Trends in the Asian Population

Massachusetts: 1970-1990

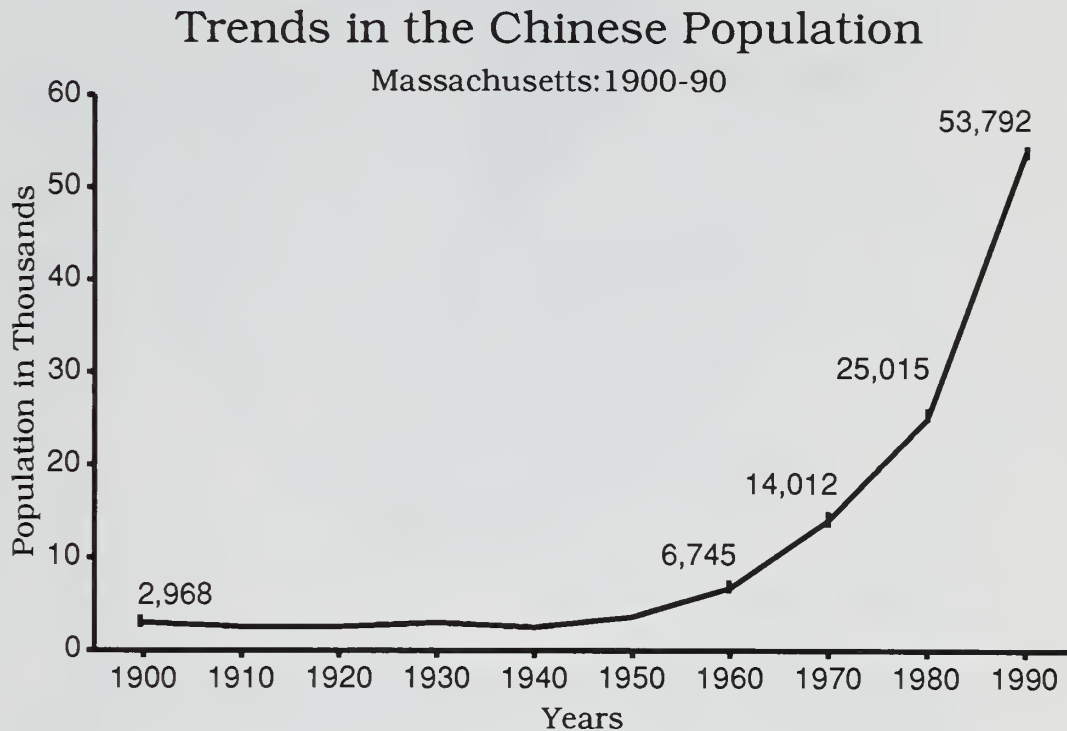


Source: U.S. Bureau of the Census

In 1900, 1 out of every 777 Massachusetts residents was Asian; by 1990 that figure had grown to 1 out of every 42. The growth was fueled not only by an increase in the number of Chinese, but also by immigration of Southeast Asians to Massachusetts, primarily Vietnamese, Cambodian, and Laotian.

Growth of Chinese population: 1900 - 1990

The Chinese population of Massachusetts remained relatively constant at approximately 3,000 persons from 1900 until 1950. Beginning in 1950, the number of Chinese approximately doubled each decade until 1990. The growth of the Chinese population in Massachusetts has been primarily the result of in-migration.

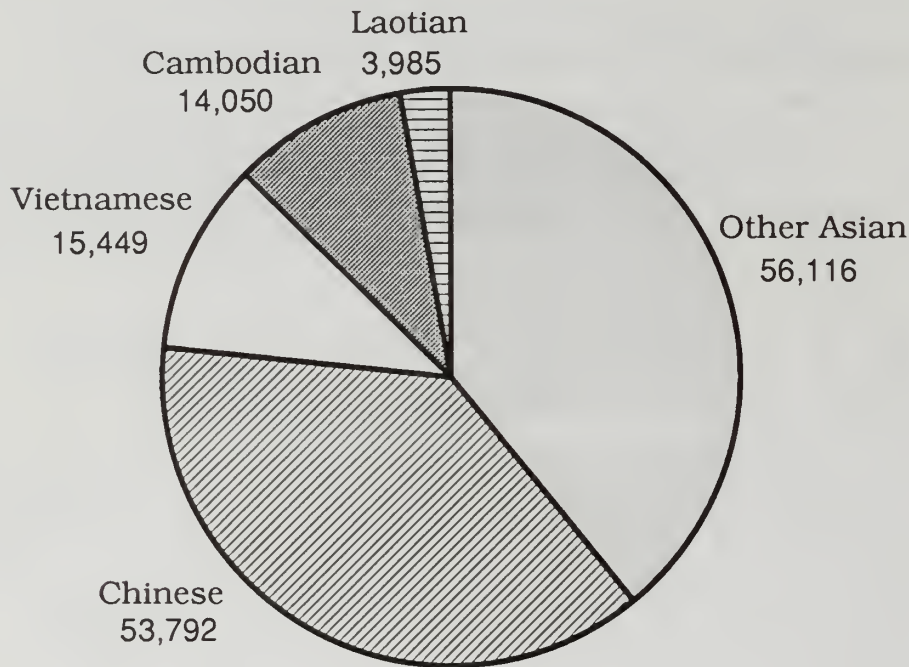


Source: U.S. Bureau of the Census

Composition of the Asian population: 1990

In 1990, 2.4% of the population in Massachusetts was Asian. The Chinese community accounted for 37.5% of the Asian population in Massachusetts; 10.8% of Asians were Vietnamese; 9.8% were Cambodian; and 3.0% were Laotian.

Distribution of Asian Population Massachusetts: 1990



Source: U.S. Bureau of the Census.

Boston had the largest Asian population in Massachusetts in 1990, 30,388, followed by Lowell, Cambridge, Quincy, and Worcester. In 1990, there were twelve communities in Massachusetts with 2,000 or more Asian residents (Table 1-1). Among these communities, Lowell had the largest concentration of Asians: one out nine residents of Lowell was Asian. Six Massachusetts communities had Asian populations totaling 5 to 10% of their population: Cambridge, 8.4%; Brookline, 8.4%; Amherst, 7.9%; Quincy, 6.6%; Boston, 5.3%; and Malden, 5.2%. Also, Revere, Chelsea, and Fitchburg had rapidly growing Asian populations, as evidenced by the number of Asian births in these communities. (See Chapter 2 for more detail about births in those communities.)

As reported on Table 1-1, the distribution of Asian ethnic groups varied enormously from community to community in Massachusetts. In Quincy and Boston, a majority of the Asian population was Chinese (74.5% and 55.0 percent, respectively). In Lowell, 56.3% of the Asian population was Cambodian, and 13.5% was Laotian. In Worcester, 50.1% of the Asian population was Vietnamese.

Trends in selected communities

From 1980 to 1990, the growth in the Massachusetts Asian population varied substantially from community to community (Table 1-2). While overall population growth had been low in many communities, the growth of the Asian population was dramatic. For instance, in Quincy and Malden, the overall population increased 2% or less, but the Chinese population grew by more than 500%. Lynn had an overall growth rate of 3.5% for the decade of the 1980s, but the total Asian population grew 1,350%. This enormous change was fueled by an increase of over 5,000% in the Vietnamese population in Lynn. In Newton, Somerville, and Waltham, the decline in the total population was offset by more than a 100% increase in the Asian population. The high overall growth rate in Lowell, 11.9% in the 1980s, was the result of the 1,803% increase in the Asian population.

Age Distribution of the Asian Population: 1980 and 1990

In 1980, the Asian population in Massachusetts was slightly younger than the total state population. Approximately 67% of the Asian population was younger than age 35, while only 56% of the state population as a whole was less than 35 years old. This trend continued in 1990, with the proportion of Asians at least 35 years old declining, while the proportion of the state's population at least 35 years old increased (Table 1-3).

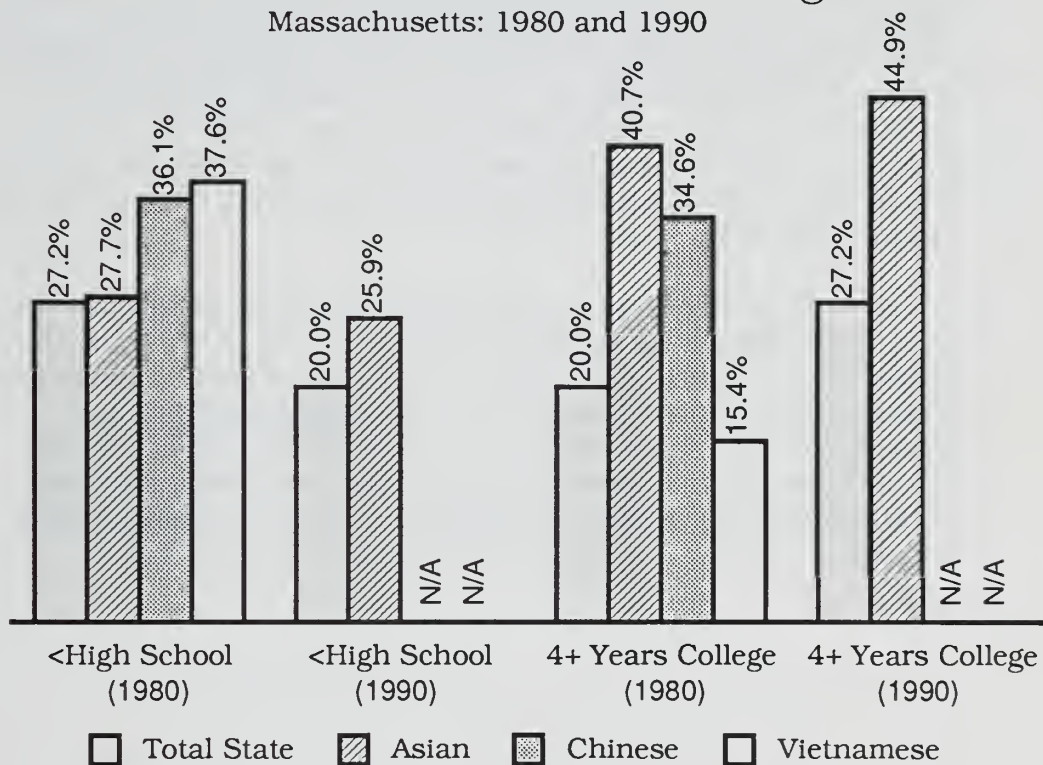
Among Asians in 1980, the Vietnamese were particularly young: almost half of the Vietnamese population (44%) was below the age of 20. Slightly less than 30% of the Chinese population was less than 20 years old, similar to the statewide proportion in 1980. (Data for Chinese and Southeast Asians for 1990 were not available as this report was being prepared.)

Education of the Asian Population: Massachusetts 1980 and 1990

Patterns of educational attainment differ for Asians compared with the Massachusetts population as a whole. In Massachusetts in 1980, the percentage of the Asian population 25 years old and older that had not graduated from high school was similar to the state population; however, over 40% of all Asians attended at least four years of college compared to only 20% of the state population. By 1990, more than 44% of the Asians in Massachusetts attended at least four years of college compared to only 27% of the state population. (Data for Chinese and Southeast Asians for 1990 were not available as this report was being prepared.)

Among Asians, there were also differences in educational attainment. In 1980, the proportion of Chinese and Vietnamese with less than a high school education was similar, but the Chinese were more than twice as likely to have attended college.

Educational Attainment of Asians, Age 25+ Massachusetts: 1980 and 1990



Source: U.S. Bureau of the Census.

Income and Poverty of the Asian Population: 1980 and 1990

Economic indicators comparing Asians to the state as a whole provide a mixed message. On the one hand, average household income for Asians was higher than for Massachusetts. However, a much higher proportion of Asians remained below the poverty level as compared to Massachusetts as a whole. Clearly, wide variation in economic status exists within the Asian community.

The average household income for all Asians in 1980 was slightly higher than the state average household income, with the Chinese income slightly lower (Table 1-4). However, the average Vietnamese household income in 1980 (\$12,525) was 40% below the average state household income of \$20,744. During the decade of the 1980s, the average annual Asian income rose 110%, as compared to a growth rate of 90% for the state as a whole. By 1990, the average annual household income for Asians was 11% higher than for the state as a whole.

The proportion of Asian families below the poverty level in 1980 was more than twice the statewide average: 16.3% vs. 7.6%. Among Asians there were vast differences, with 12.3% of the Chinese population below the poverty line, as compared to 39.7% of the Vietnamese population. Patterns of poverty persisted in 1990, with the poverty rate increasing by approximately 20% for both Asians and the overall state population. In 1990, the proportion of Asians living in poverty remained more than twice the state average, 19.7% vs. 8.9%.

In 1980, the unemployment rate for the Asian population was lower than that for the state as a whole, 4.6% vs. 5.1%. The percentage of Vietnamese who were unemployed was substantially greater, 8.0%. During the 1980s, the unemployment rate increased 39% for Asians compared with a 31% increase statewide. In 1990, the unemployment rate for Asians remained lower than the statewide rate, 6.4% vs. 6.7%. (Note: income and poverty data reported in the U.S. Census are for the previous calendar year.)

Summary

In summary, the Asian population in Massachusetts has grown exponentially since 1950. In Massachusetts, there is a large and heterogeneous Asian community.

In 1990, 12 Massachusetts cities had an Asian population greater than 2,000 persons, accounting for 57.3% of all Asians in the state. The Asian population was younger than the state as a whole.

The Asian community was also characterized by bipolar patterns in education and socioeconomic status. While the proportion of Asians obtaining a college degree is much higher than the state as a whole, the proportion of Asians with low educational attainment is above the state average as well.

Income and poverty data indicated enormous variation in the Asian community. Asians in 1980 and 1990 had both a higher average annual family income, and a higher percentage of families below the poverty level than were reported for the statewide population. In 1990 the average household income for Asians was 11% higher than the statewide level, but the proportion below poverty for Asians was almost double that for the state as a whole.

Recent Trends in Chinese and Southeast Asian Births in Massachusetts: 1987-1990

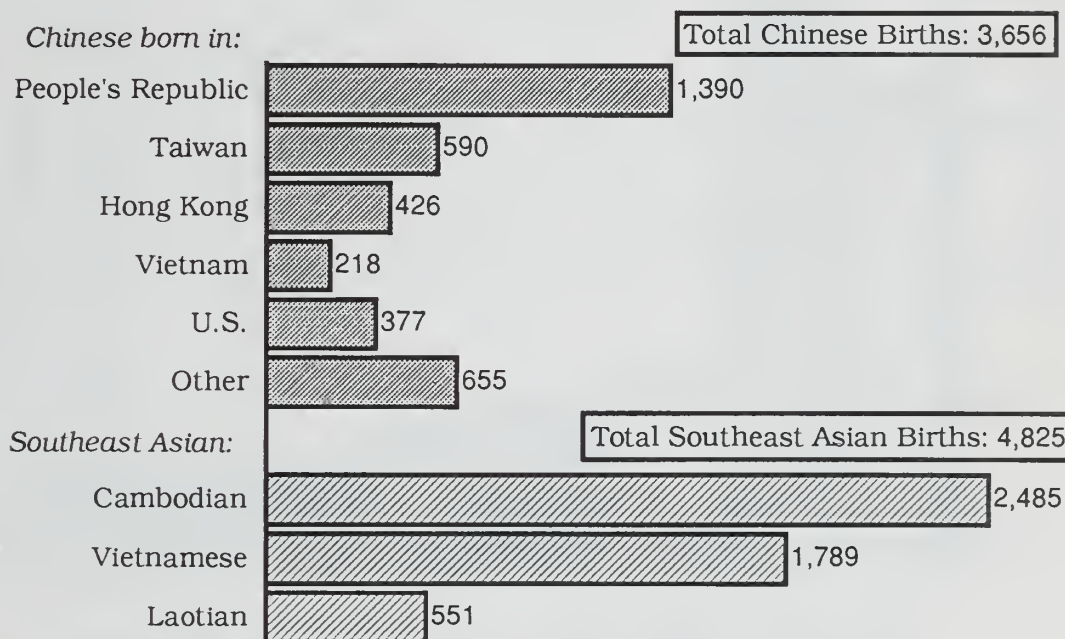


From 1987 through 1990, how many Chinese and Southeast Asian births occurred in Massachusetts?

From 1987 through 1990, there were 3,656 births among Chinese women who were residents of Massachusetts. These mothers were born in many different places: 1,390 in the People's Republic of China, 590 in Taiwan, 426 in Hong Kong, 218 in Vietnam, 377 in the U.S., and 655 in other places throughout the world. Among Southeast Asian mothers, there were 2,485 births to Cambodian women, 1,789 to Vietnamese women, and 551 to Laotian women (Table 2-1).

Number of Chinese and Southeast Asian Births

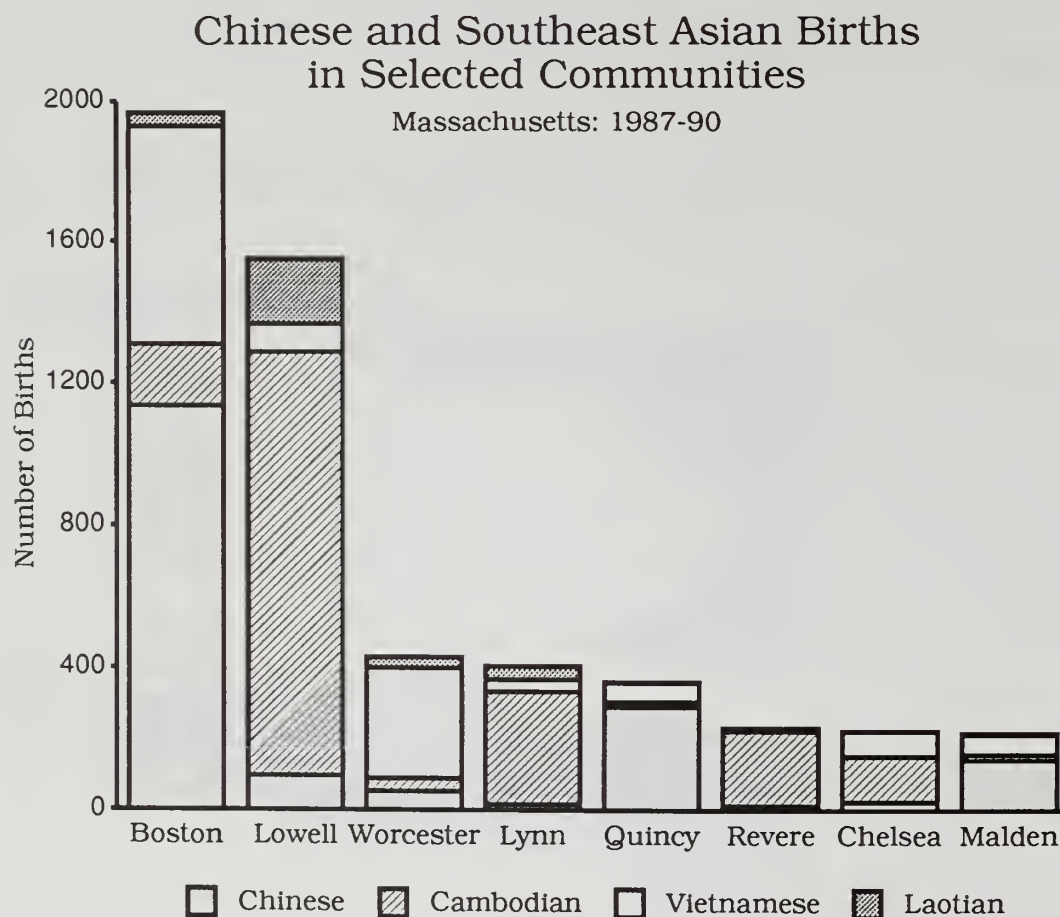
Massachusetts: 1987-90



Where did the Chinese and Southeast Asian mothers live in Massachusetts?

The largest number of Chinese mothers resided in Boston (1,135), followed by Quincy (290), Cambridge (176), and Malden (140). Chinese mothers born in Vietnam lived primarily in Boston (101), Quincy (21), and Malden (20). U.S.-born Chinese mothers resided in Boston (70), Newton (25), and Brookline (24).

Cambodian mothers lived mainly in Lowell (1,193), Lynn (318), Revere (210), Boston (173), Chelsea (128), and Fall River (94). Vietnamese mothers lived in Boston (621), Worcester (311), Lawrence (79), Lowell (78), and Chelsea (71). Laotian mothers lived primarily in Lowell (185) and Fitchburg (102).

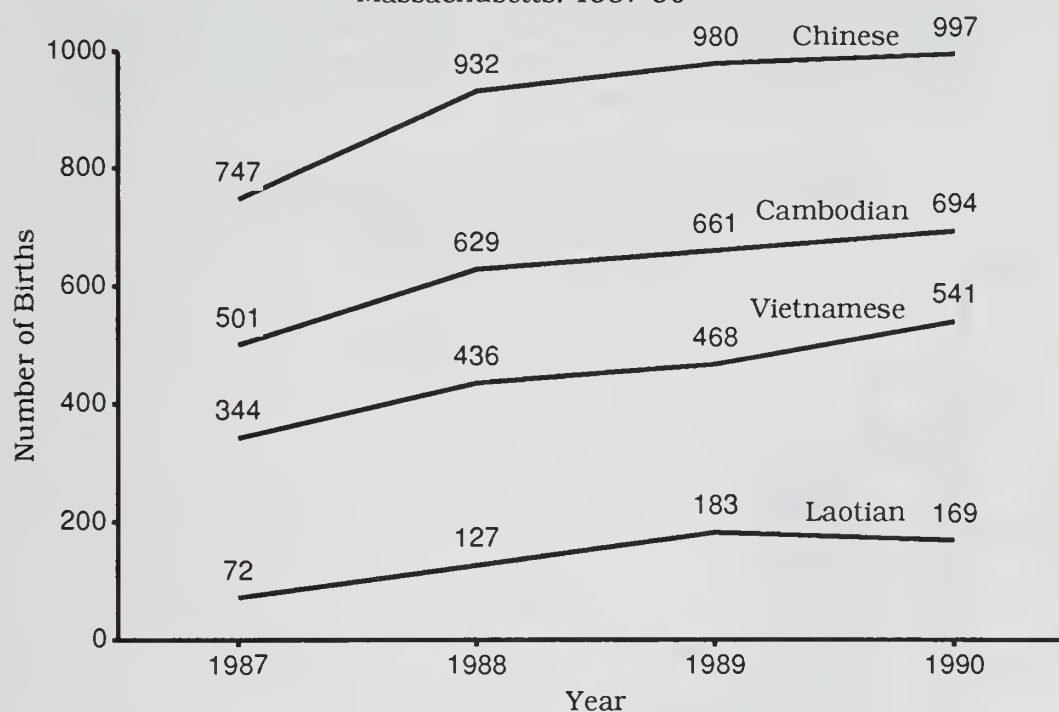


From 1987 through 1990, what were the trends in the number of births among Chinese and Southeast Asian women in Massachusetts?

From 1987 through 1990, the number of births among Chinese women increased 33%, from 747 to 997 (Table 2-2). In Massachusetts, from 1987-1989 there was a dramatic increase in the number of births among Chinese women who had been born in Asia, but this levelled off in 1990. In 1990, births among U.S.-born Chinese mothers showed the largest increase in births within the Chinese population. The number of births among Cambodian and Vietnamese women rose each year from 1987 to 1990. The number of births among Laotian women peaked in 1989 and declined slightly in 1990. (It is too soon to tell whether these annual changes represent firm trends or yearly fluctuation in the number of births.)

Chinese and Southeast Asian Birth Trends

Massachusetts: 1987-90



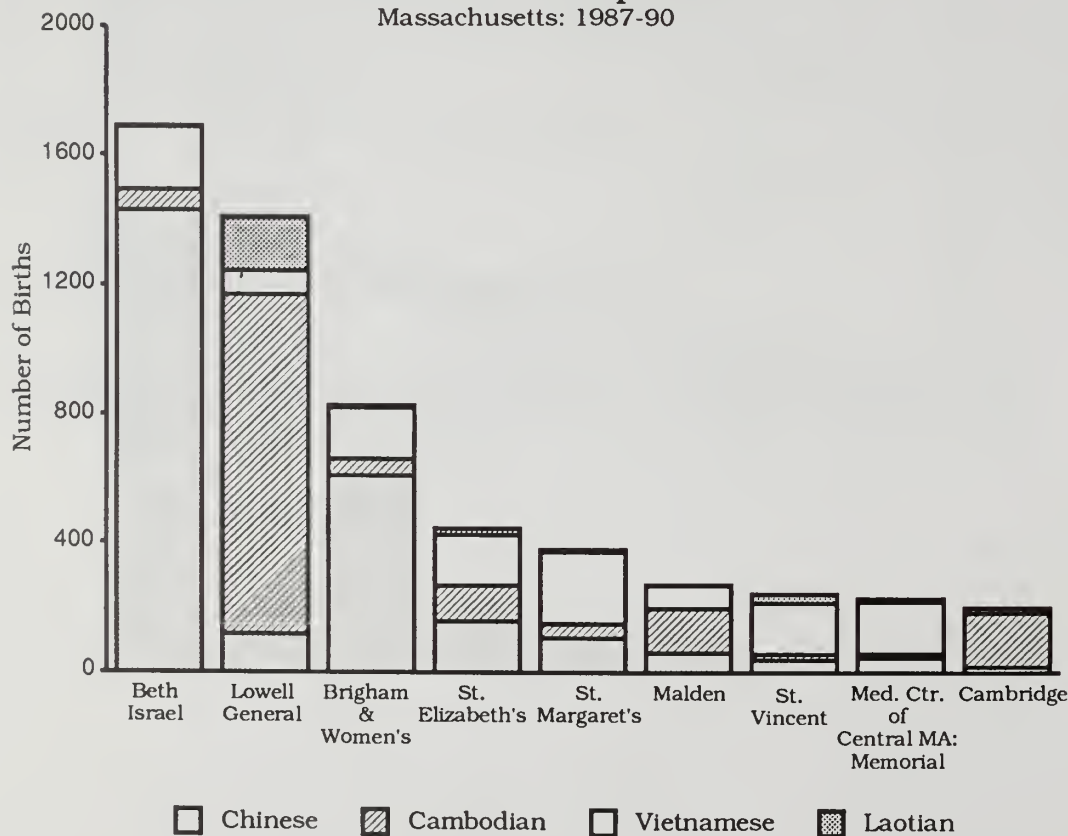
From 1987 through 1990, in what hospitals did Chinese and Southeast Asian mothers deliver their infants?

From 1987 through 1990, Beth Israel Hospital had the highest number of Chinese births: 1,430 (Table 2-3). Other hospitals with large numbers of Chinese births were Brigham and Women's Hospital (610), St. Elizabeth's (158), Newton-Wellesley (139), Lowell General (118), and St. Margaret's (107). Chinese mothers born in the People's Republic of China, Hong Kong, and Vietnam were more likely to deliver their infants at Beth Israel Hospital; and U.S.-born and Taiwan-born Chinese mothers were more likely to deliver their infants at Brigham and Women's Hospital.

The largest number of Cambodian women delivered their infants at Lowell General Hospital: 1,051 births from 1987 through 1990. Other hospitals with more than 100 Cambodian deliveries were: Cambridge (168), Lynn; now Union (151), Malden (138), Salem (114), and St. Elizabeth's (109). Six hospitals recorded at least 100 deliveries by Vietnamese mothers: St. Margaret's (219), Beth Israel (192), Brigham and Women's (160), Medical Center of Central Massachusetts-Memorial (159), St. Elizabeth's (157), and St. Vincent (157). The largest number of Laotian infants was delivered at Lowell General Hospital (164).

**Chinese and Southeast Asian Births
at Selected Hospitals**

Massachusetts: 1987-90



Demographic Characteristics of Chinese and Southeast Asian Mothers: 1987-1990

DEMOGRAPHIC CHARACTERISTICS

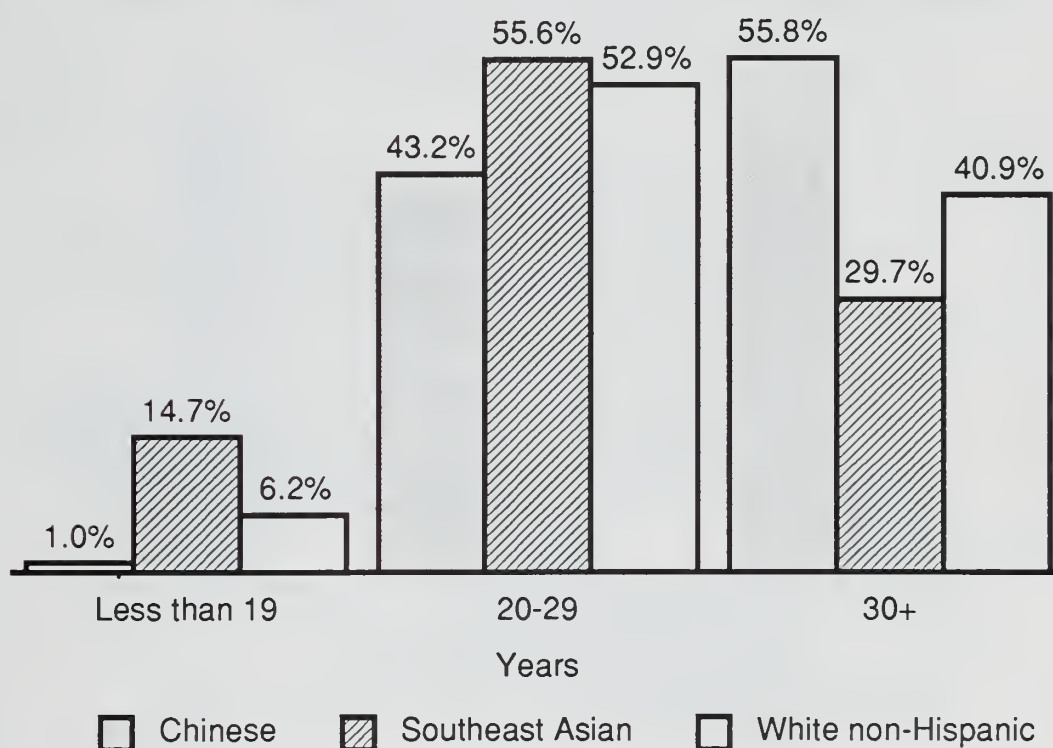


How old were Chinese and Southeast Asian mothers?

As reported in Table 3-1, Chinese mothers were more likely to give birth at age 30 or older than either white non-Hispanic mothers or Southeast Asian mothers. Nearly 56% of Chinese women who gave birth in Massachusetts in 1987-1990 were aged 30 or older, compared to only 41% of white non-Hispanic mothers and 30% of Southeast Asian mothers.

Percentage of Chinese, Southeast Asian, and White Non-Hispanic Mothers by Age Group

Massachusetts: 1987-1990

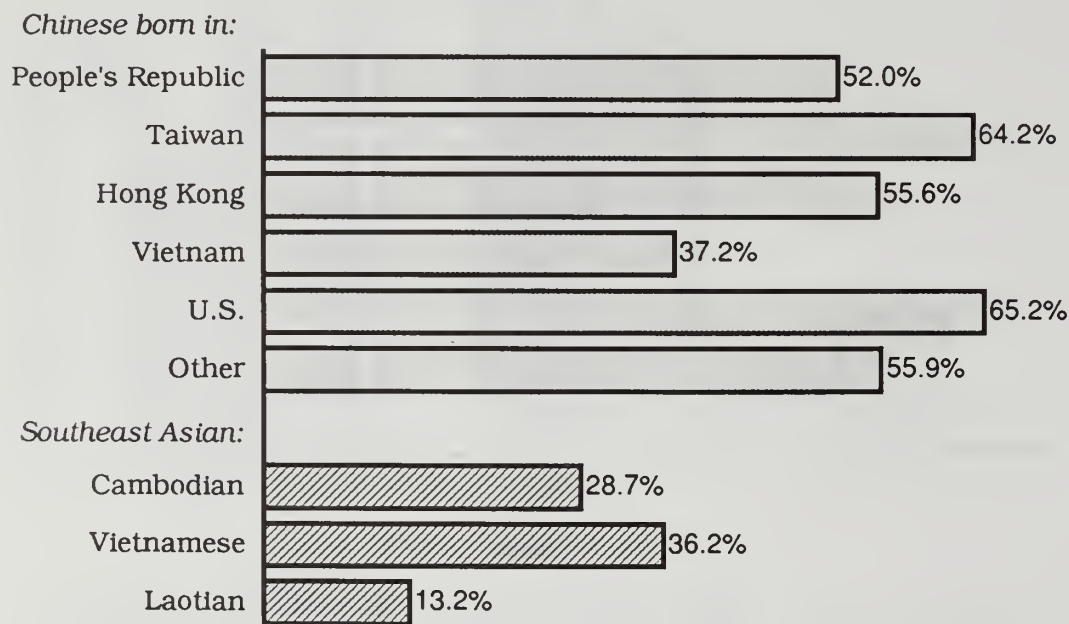


How did the age distribution of Chinese and Southeast Asian mothers vary?

Among Chinese mothers, the age distribution by country of mother's birth was generally similar. Only Chinese mothers born in Vietnam had a median age younger than 30 years. Chinese mothers tended to be older than Southeast Asian mothers, although the proportion of mothers age 30 and over varied enormously. About 1 out of 7 Laotian mothers were over age 29 compared to almost 2 out of three Chinese mothers born in Taiwan or the U.S. Southeast Asian mothers were younger than most other groups: 21% of Laotian mothers, 11% of the Vietnamese mothers and 16% of the Cambodian mothers were teenagers. Only 6% of the white non-Hispanic mothers and 1% of the Chinese mothers were less than 20 years old (Table 3-1).

Percentage of Chinese and Southeast Asian Mothers Age 30 and Above

Massachusetts: 1987-90



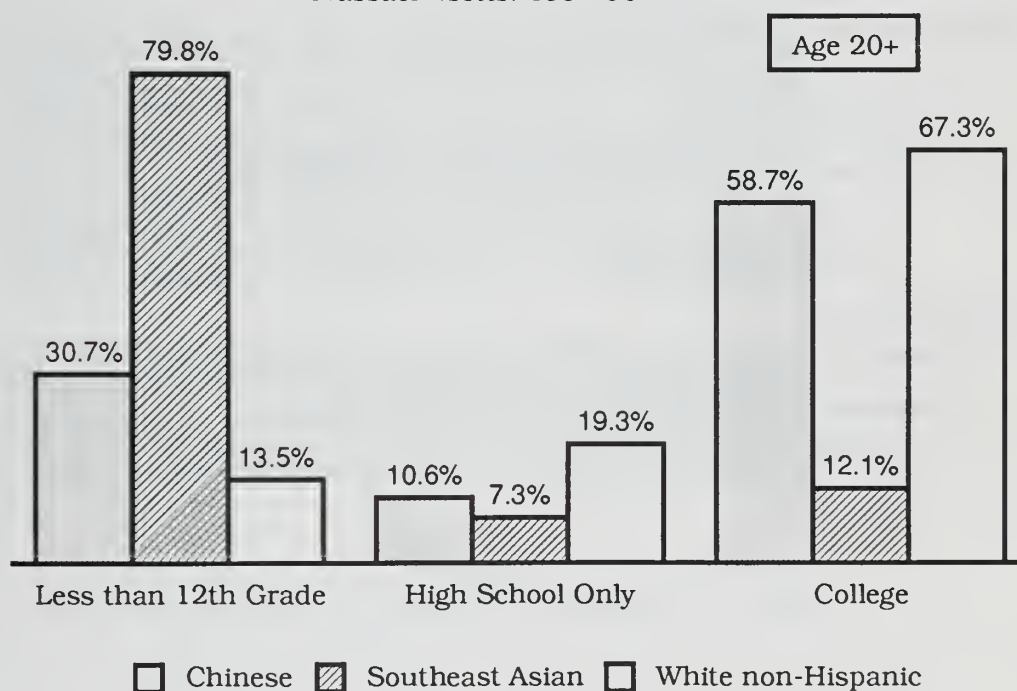
Were there differences in educational attainment between Chinese and Southeast Asian mothers?

Chinese mothers were more educated than Southeast Asian women: 69% of the Chinese mothers had at least a high school education, compared to 20% of Southeast Asian mothers. Approximately 87% of white non-Hispanic mothers reported having had completed at least a high school education (Table 3-1).

Variation in the level of educational attainment by ethnicity may be related to differences in the opportunities for schooling among different population groups. Only mothers who were 20 years or older were included in the examination of educational differences.

Percentage of Chinese, Southeast Asian and White Non-Hispanic Mothers by Educational Level

Massachusetts: 1987-90

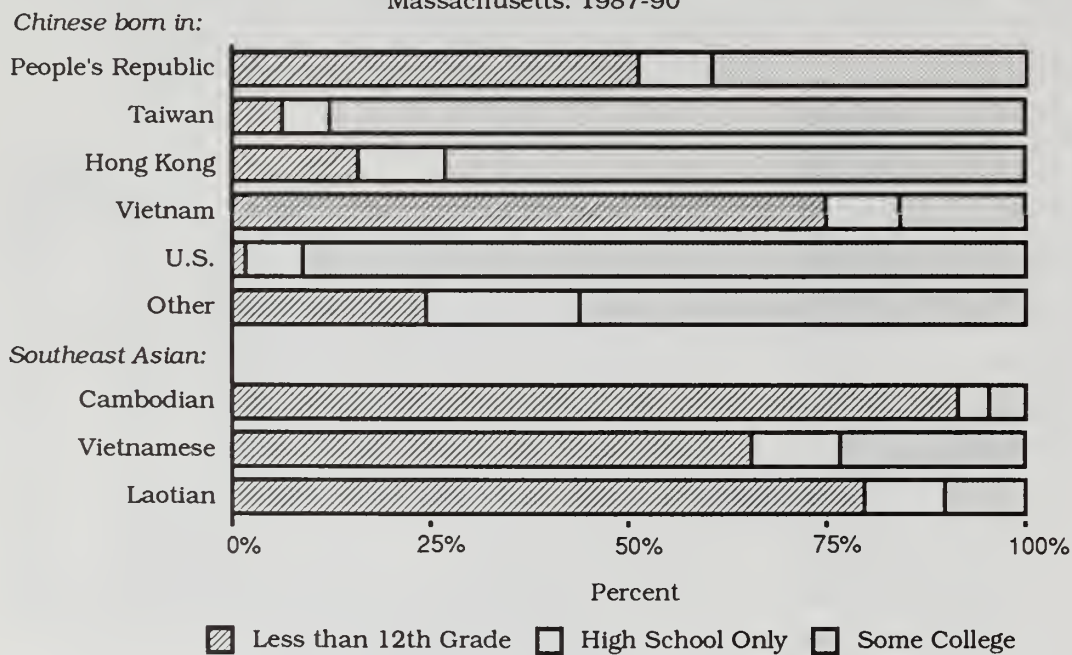


How did the levels of educational attainment for Chinese and Southeast Asian mothers age 20 and above vary?

As reported in Table 3-1, a striking proportion of two Chinese groups attended college — 88% of the Taiwan-born and 91% of the U.S. born Chinese mothers. College attendance was reported by very few Cambodians (5%) and Laotians (10%). Several ethnic groups had high proportions of mothers with less than a 9th grade education: Cambodians (77%), Vietnamese-born Chinese (43%), and Laotians (60%).

Percentage of Chinese and Southeast Asian Mothers by Educational Level, Ages 20 and Above

Massachusetts: 1987-90



What proportion of Chinese and Southeast Asian mothers were not married?

A low proportion (3%) of Chinese mothers were unmarried when they delivered their infants. In contrast, 45% of Southeast Asian mothers and 16% of white non-Hispanic mothers were not married (Table 3-1).

Differences in reporting of marital status may be related to different cultural interpretations of the question.

Medical Characteristics of Chinese and Southeast Asian Mothers: 1987-1990

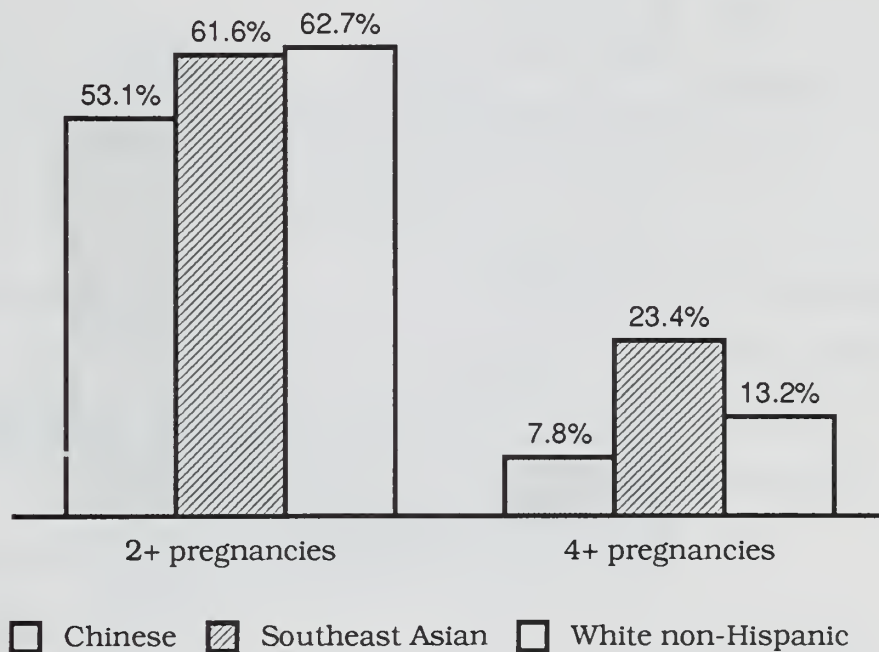
MEDICAL CHARACTERISTICS



Did Chinese and Southeast Asian mothers differ in the total number of pregnancies they have ever had?

Slightly more than half (53%) of the Chinese mothers reported at least two pregnancies (Table 4-1). The proportions among both Southeast Asian and white non-Hispanic mothers were greater, 62% and 63%, respectively. The proportion of women reporting at least four total pregnancies varied enormously: 8% of Chinese mothers, 13% of white non Hispanic mothers, and 23% of Southeast Asian mothers reported at least 4 pregnancies.

Percentage of Chinese, Southeast Asian, and White Non-Hispanic Mothers by Number of Pregnancies
Massachusetts: 1987-90

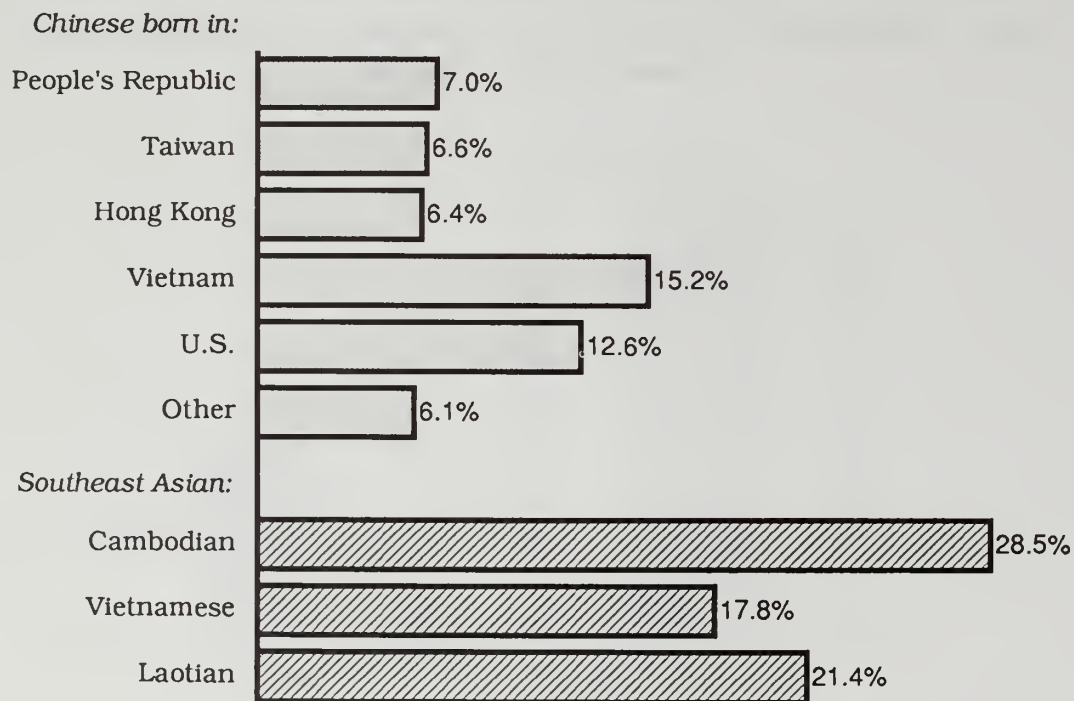


How did the number of the pregnancies vary among Asian mothers?

Among Chinese mothers, four or more pregnancies were reported more frequently by mothers born in Vietnam and born in the U.S. Cambodian mothers (28%) and Laotian mothers (21%) reported the highest percentage of mothers with at least four pregnancies (Table 4-1).

Percentage of Chinese and Southeast Asian Mothers with Four or More Pregnancies

Massachusetts: 1987-90

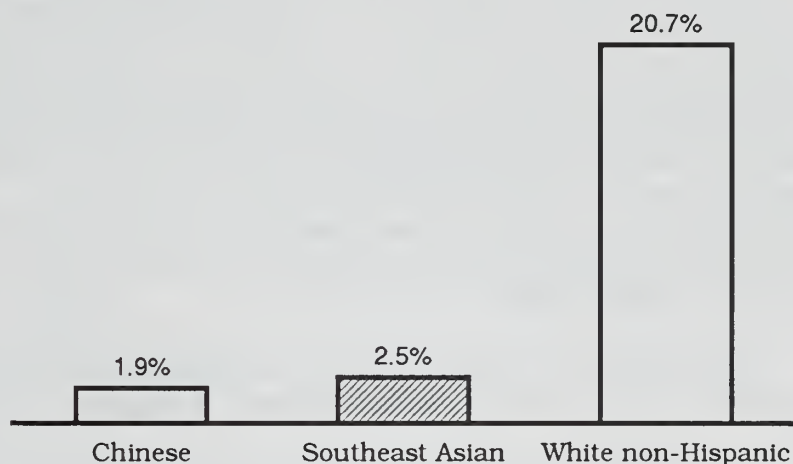


What proportion of Chinese and Southeast Asian mothers smoked cigarettes during pregnancy?

Chinese and Southeast Asian mothers were far less likely to smoke during pregnancy than white non-Hispanic mothers: 2% and 2.5% versus 21% (Table 4-1). U.S.-born mothers had the highest percentage of smokers among the Chinese.

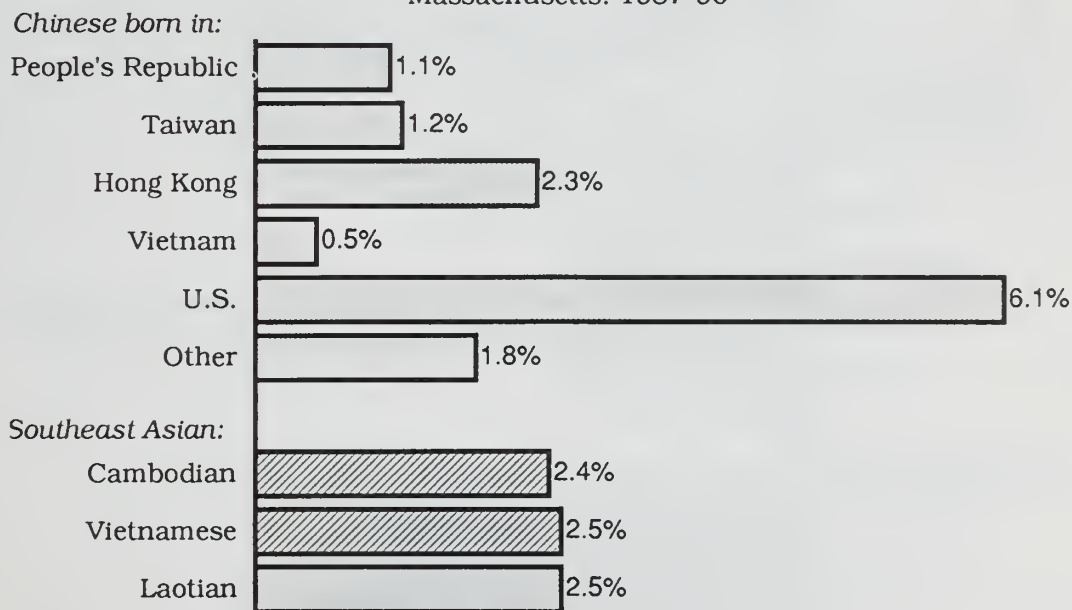
Percentage of Chinese, Southeast Asian, and White Non-Hispanic Mothers Who Smoked During Pregnancy

Massachusetts: 1987-90



Percentage of Chinese and Southeast Asian Mothers Who Smoked During Pregnancy

Massachusetts: 1987-90



What proportion of Chinese and Southeast Asian mothers had any medical risk factors that might have complicated their deliveries?

Overall, there were essentially no differences in the overall prevalence of any medical risk conditions among the Chinese, Southeast Asian, and white non-Hispanic mothers. There was approximately one medical risk condition reported for every four births for each population group.

What medical conditions were most commonly reported for Chinese and Southeast Asian mothers?

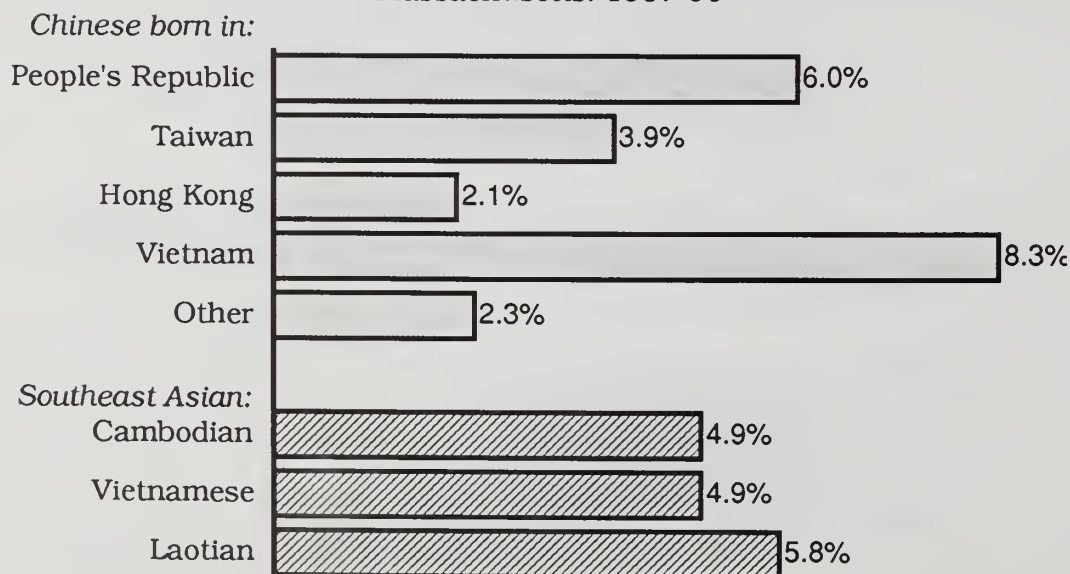
Three conditions in particular were mentioned more frequently on the birth certificates of infants born to Chinese and Southeast Asian mothers when compared with birth certificates of infants born to white non-Hispanic mothers: hepatitis B, diabetes, and anemia. Only 0.1% of white non-Hispanic infants had mothers with hepatitis B reported, compared to 4% of Chinese mothers and 5% of Southeast Asian mothers (Table 4-1). The highest rates of hepatitis B were among Chinese mothers born in Vietnam (8%) and the People's Republic of China (6%), and among Laotian mothers (6%).

Almost 3% of Chinese mothers, as compared to 1% of white non-Hispanic mothers, reported diabetes.

Almost 4% of Cambodian mothers reported anemia, compared to 2% of the Chinese mothers and 1% of white non-Hispanic mothers.

Percentage of Chinese and Southeast Asian Mothers with Hepatitis

Massachusetts: 1987-90

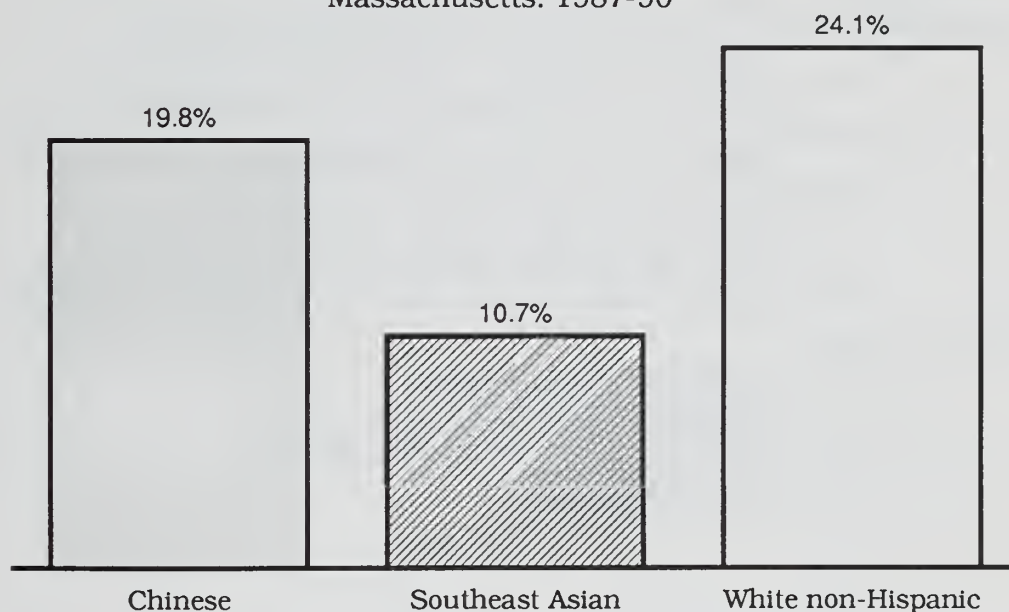


What proportion of Chinese and Southeast Asian mothers had Caesarean section deliveries?

Delivery by Caesarean section occurred less frequently among Asian mothers than among white non-Hispanics. The lowest Caesarean section delivery rate was among Southeast Asian women, 11%. Almost one in five Chinese mothers had a Caesarean section delivery (20%); and 24% of white non-Hispanic mothers delivered by Caesarean section (Table 4-1).

Percentage of Chinese, Southeast Asian, and White Non-Hispanic Infants Delivered by Caesarean Section

Massachusetts: 1987-90



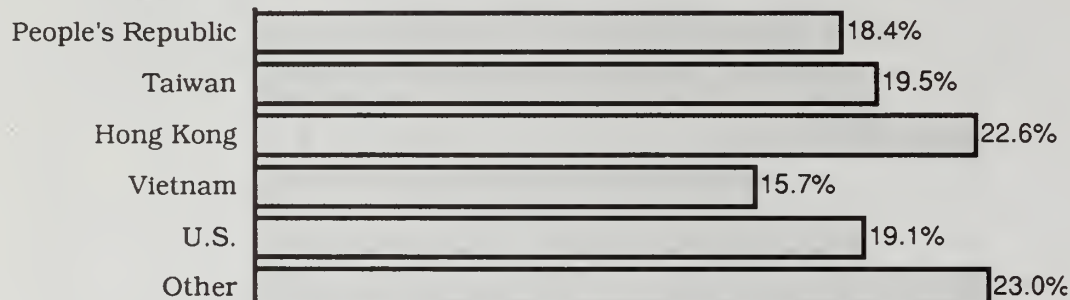
How did the proportion of Cesarean section deliveries vary among Chinese and Southeast Asian women?

The proportion of Chinese mothers who had Cesarean section deliveries ranged from 16% (Vietnam-born) to 23% (Hong Kong-born). Only 7% of Laotian mothers, 9% of Cambodian mothers, and 14% of the Vietnamese mothers delivered by Cesarean section (Table 4-1).

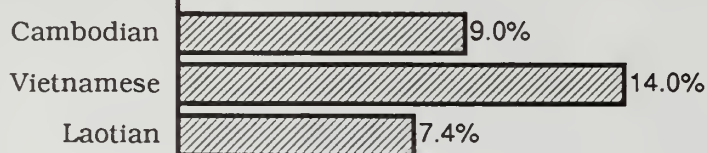
**Percentage of Chinese and Southeast Asian Infants
Delivered by Cesarean Section**

Massachusetts: 1987-90

Chinese born in:



Southeast Asian:



Prenatal Care among Chinese and Southeast Asian Mothers: 1987-1990

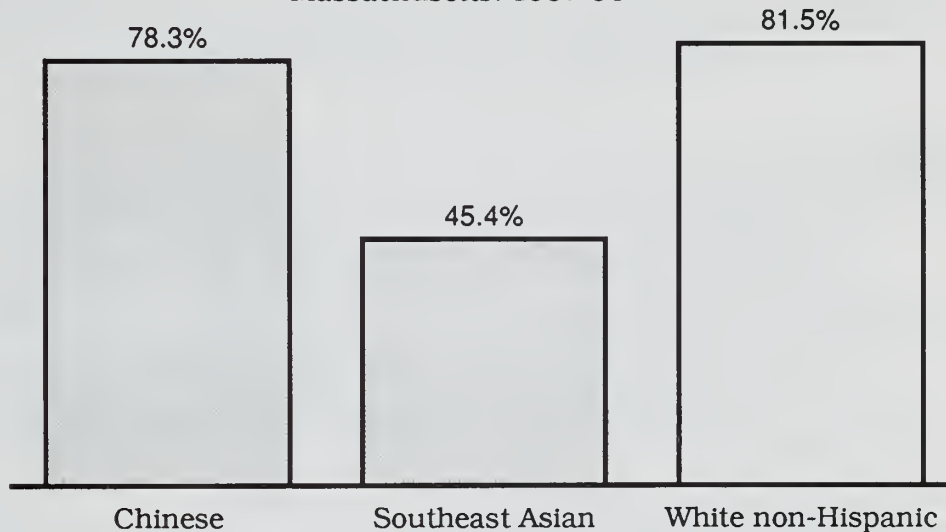


What proportion of Chinese and Southeast Asian women received adequate prenatal care?

From 1987 through 1990, similar percentages of Chinese women and white non-Hispanic women received adequate prenatal care: 78% and 82%, respectively. Southeast Asian women were much less likely (45%) to have received adequate prenatal care (Table 5-1). (Adequacy of prenatal care is based on the Kessner Index; see Glossary for definition.)

Percentage of Chinese, Southeast Asian, and White Non-Hispanic Mothers with Adequate Prenatal Care

Massachusetts: 1987-90

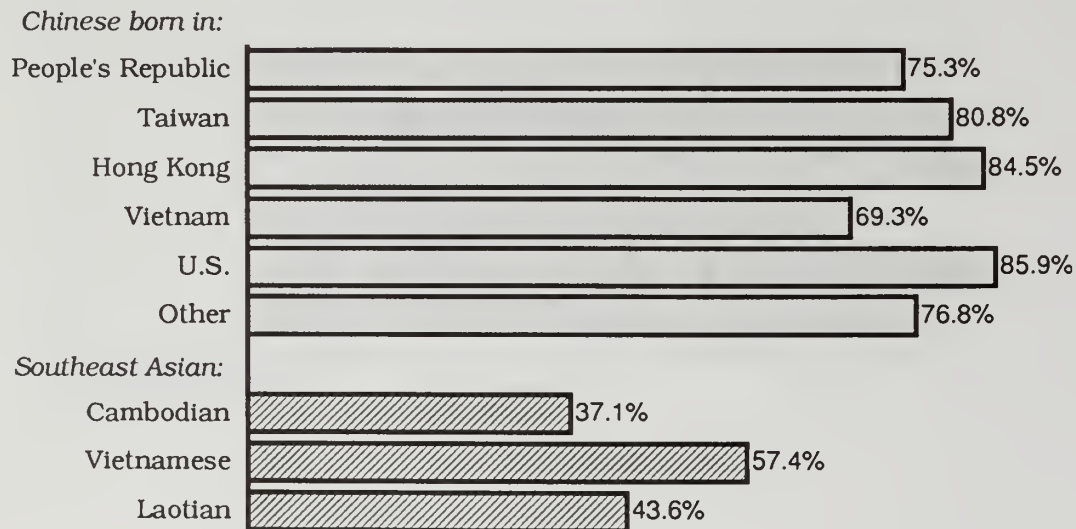


How did the proportion of mothers receiving adequate prenatal care vary among Chinese and Southeast Asian mothers?

Among Chinese mothers, U.S.-born and Hong Kong-born women had the highest percentage of mothers who received adequate prenatal: 86% and 84%, respectively (Table 5-1). For Southeast Asian mothers, prenatal care was dramatically different. Among Cambodian mothers, only 37% received adequate prenatal care; among Laotian mothers, 44%; and among Vietnamese mothers, 57%.

**Percentage of Chinese and Southeast Asian Mothers
with Adequate Prenatal Care**

Massachusetts: 1987-90



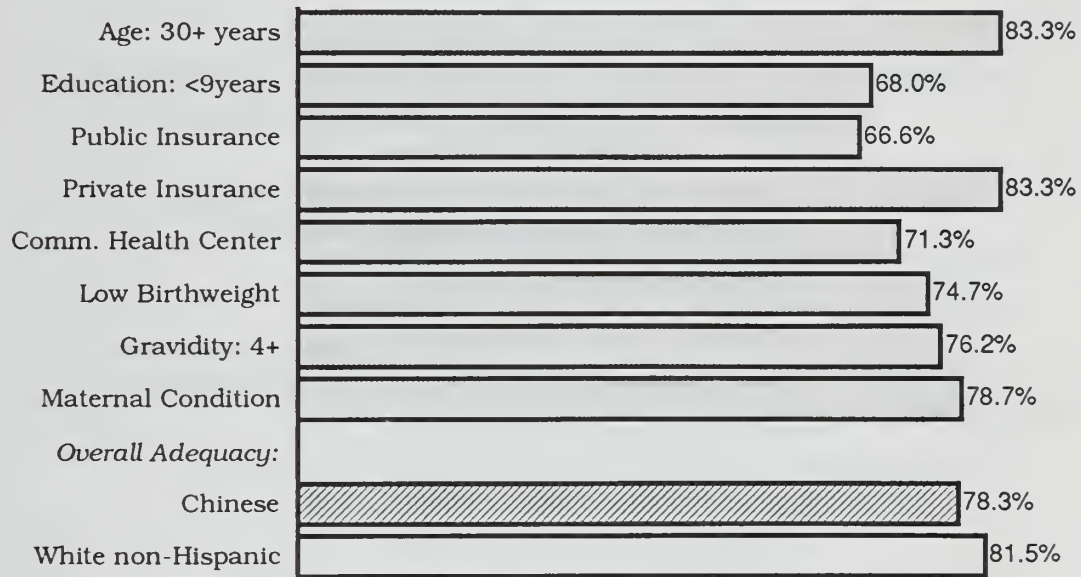
How did adequacy of prenatal care vary among Chinese and Southeast Asian mothers for selected demographic and perinatal characteristics?

The percentage of Chinese mothers who received adequate prenatal care was relatively consistent, regardless of characteristic. For four of the characteristics examined (education less 9th grade, publicly insured, care received at a community health center, and low birthweight), Chinese mothers had a higher percentage of adequacy of care than did white non-Hispanic mothers.

Among Cambodian and Vietnamese mothers, being privately insured for prenatal care was a strong correlate of having received adequate care. Among Laotian mothers, those who were privately insured had the highest level of adequacy of prenatal care.

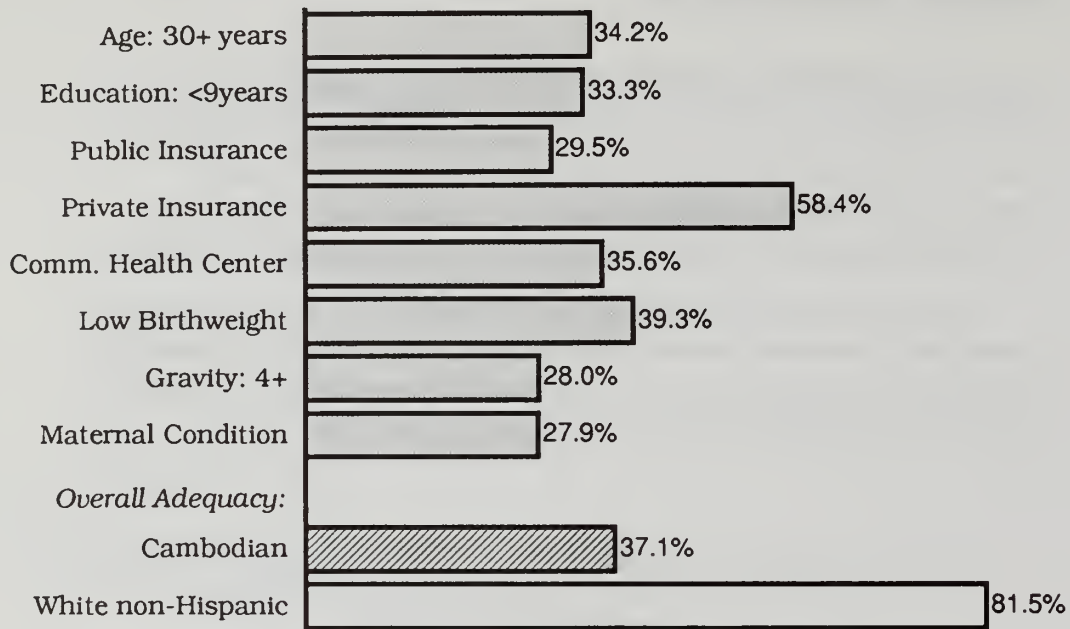
**Adequacy of Prenatal Care for Chinese Mothers
by Selected Population Characteristics**

Massachusetts: 1987-90



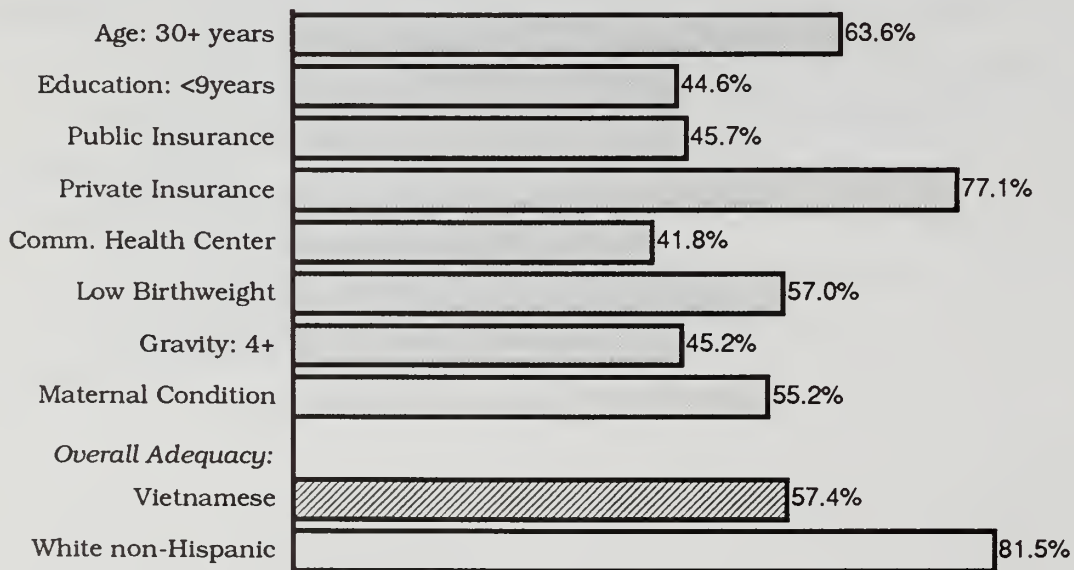
Adequacy of Prenatal Care for Cambodian Mothers by Selected Population Characteristics

Massachusetts: 1987-90



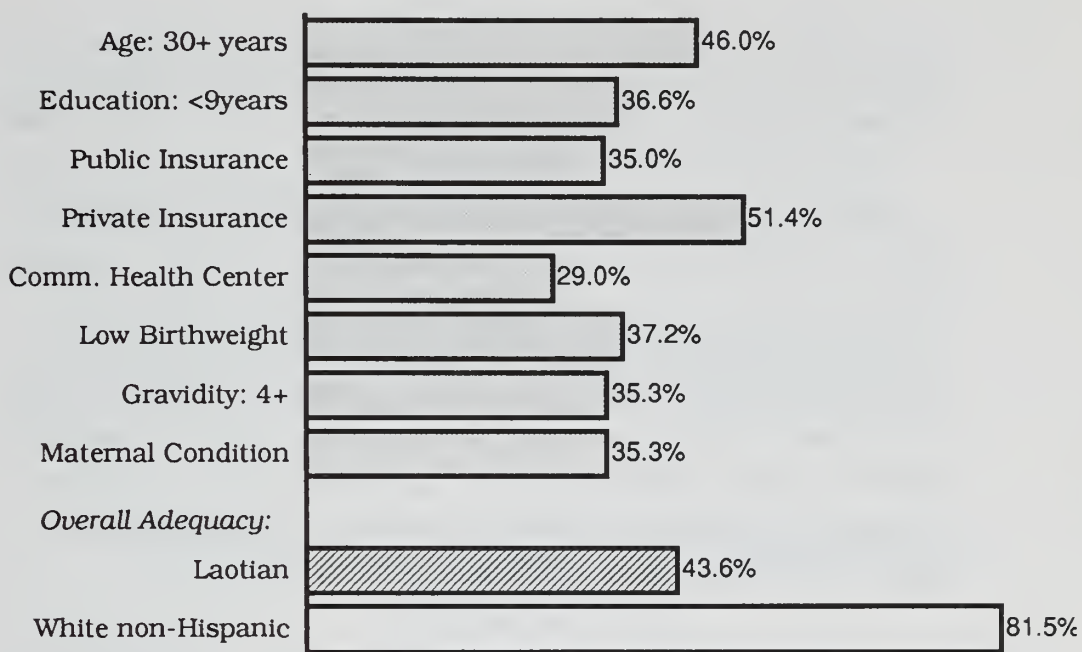
Adequacy of Prenatal Care for Vietnamese Mothers by Selected Population Characteristics

Massachusetts: 1987-90



Adequacy of Prenatal Care for Laotian Mothers by Selected Population Characteristics

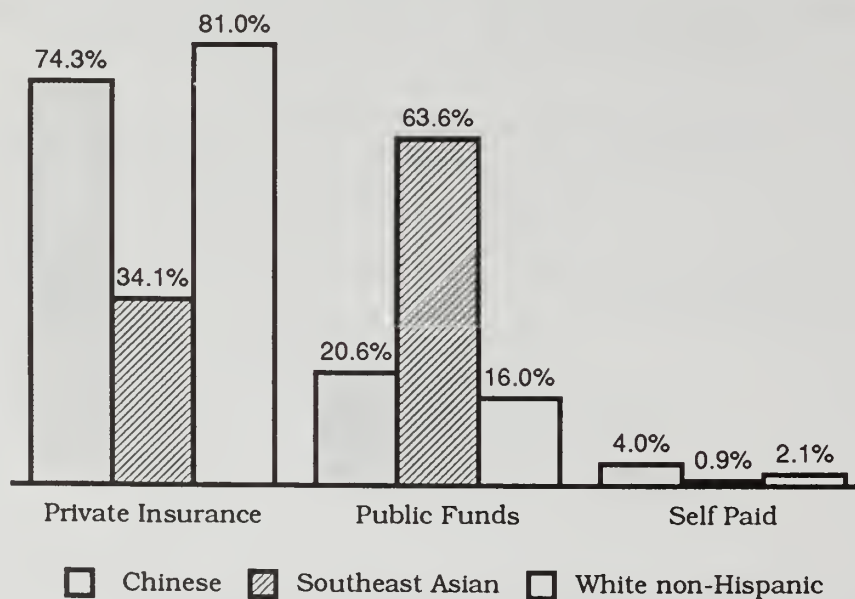
Massachusetts: 1987-90



What kind of prenatal care health insurance did Chinese and Southeast Asian mothers have?

Private insurance (Blue Cross/Blue Shield, commercial insurance, and HMO) was the source of payment for prenatal care for 74% of Chinese mothers, 34% of Southeast Asian mothers, and 81% of white non-Hispanic mothers (Table 5-1). For 21% of Chinese mothers, 64% of Southeast Asian mothers, and 16% of white non-Hispanic mothers, prenatal care was paid by public funds (Medicaid, Healthy Start, etc). Four percent of Chinese mothers paid for prenatal care themselves, compared to 2% of white non-Hispanic mothers.

Percentage of Chinese, Southeast Asian, and White Non-Hispanic Mothers by Prenatal Care Payment Source
Massachusetts: 1987-90



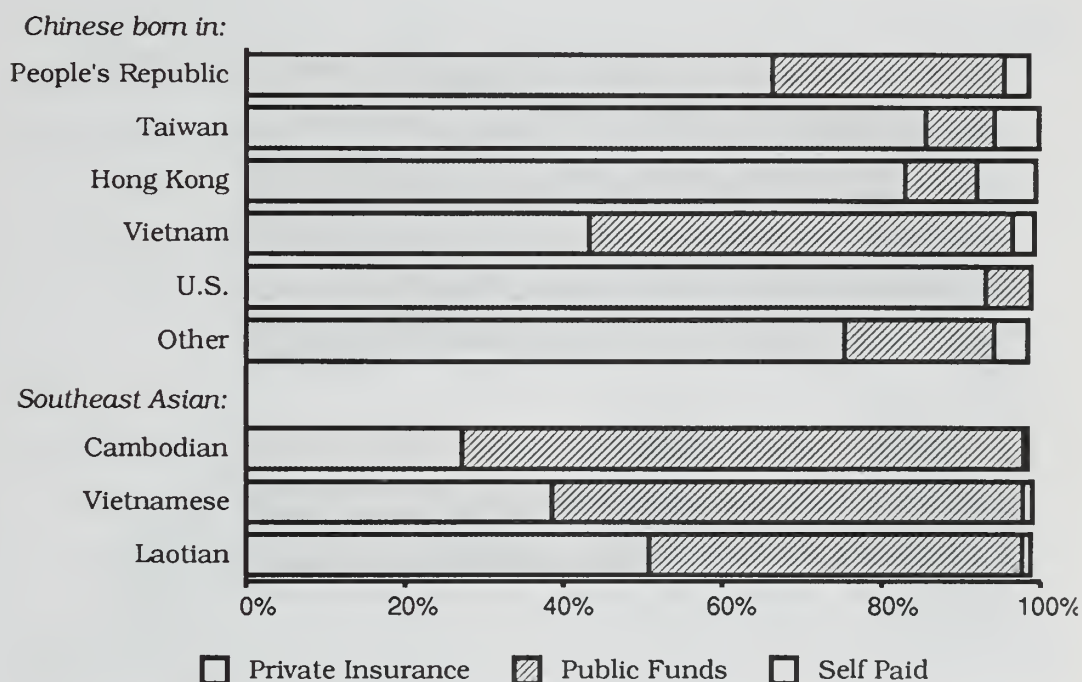
How did the sources of prenatal care payment for Chinese and Southeast Asian mothers vary?

U.S.-born Chinese women, Taiwan-born Chinese women, and Hong Kong-born Chinese mothers reported the highest percentages of prenatal care paid for by private insurance, 93%, 86%, and 83%, respectively. In contrast, Southeast Asian mothers had markedly lower percentages of prenatal care paid for by private insurance (Table 5-1). Only 27% of Cambodian women, 39% of Vietnamese women, and 51% of Laotian women had their prenatal care medical expenses reimbursed by private insurance.

Of particular note was the high percentage of Chinese women who paid for their own prenatal care. Over 7% of Hong Kong-born mothers and 6% of Taiwanese mothers paid for their prenatal care themselves.

Percentage of Chinese and Southeast Asian Mothers by Prenatal Care Payment Source

Massachusetts: 1987-90

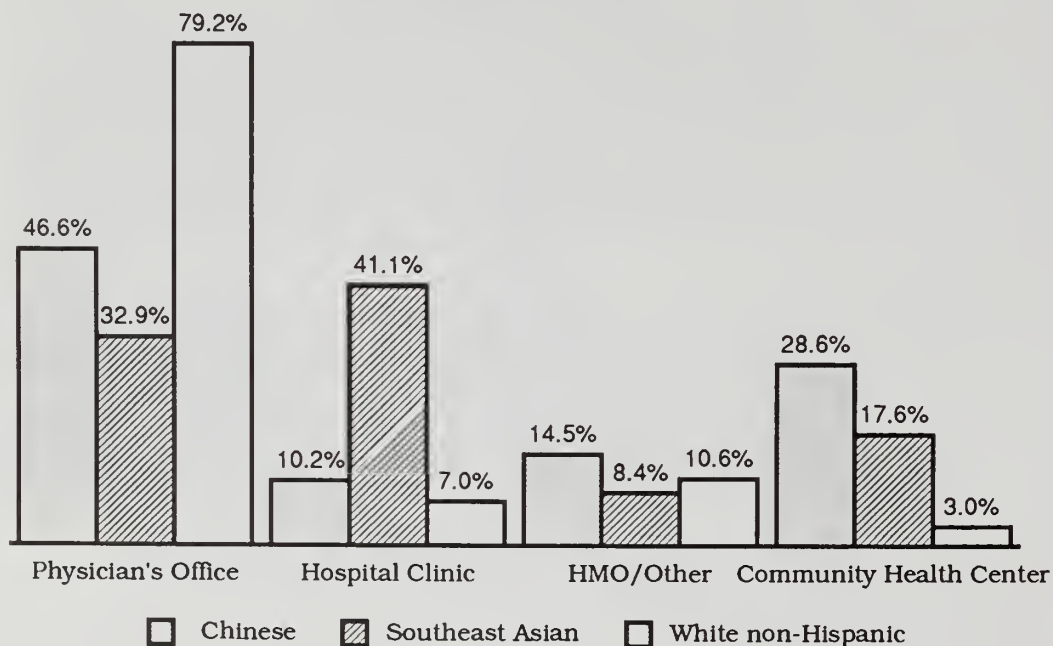


Where did Chinese and Southeast Asian mothers receive prenatal care?

The four most common locations for prenatal care were private physicians' offices, hospital clinics, HMOs, and community health centers. Among Chinese women, the most often used sites were private physicians' offices (47%) and community health centers (29%). Among Southeast Asian women, the most often used sites were hospital clinics (41%), followed by private physicians' offices (33%) and community health centers (18%). Among Southeast Asian women, the most often used sites were hospital clinics (41%), followed by private physicians' offices (33%) and community health centers (18%) (Table 5-1). In sharp contrast, 79% of white non-Hispanic women received their prenatal care at private physicians' offices.

Percentage of Chinese, Southeast Asian and White Non-Hispanic Mothers Using Different Prenatal Care Sites

Massachusetts: 1987-90

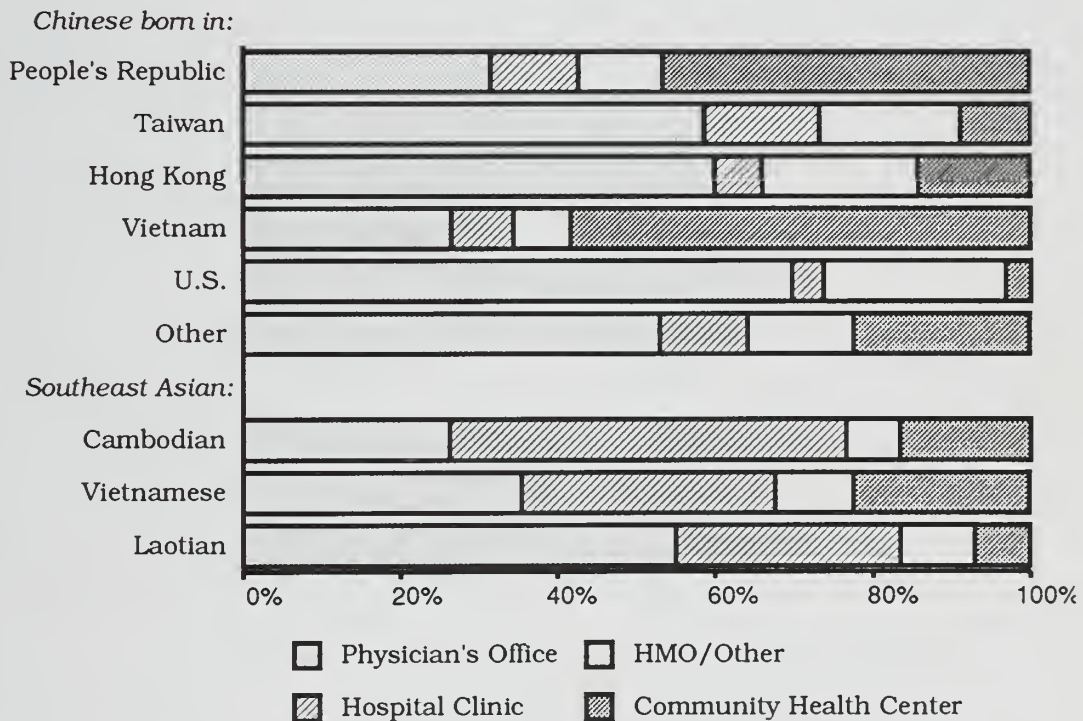


Did prenatal care sites differ among Chinese and Southeast Asian groups?

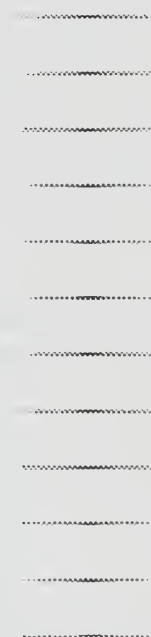
Among Southeast Asians, the site of prenatal care varied by ethnicity. Approximately 50% of the Cambodian women received their prenatal care in hospital clinics, whereas 55% of Laotian mothers had their prenatal care provided in physicians' offices (Table 5-1). Among Vietnamese mothers, nearly equal proportions received their care in private physicians' offices (35%) and hospital clinics (32%).

Percentage of Chinese and Southeast Asian Mothers Using Different Prenatal Care Sites

Massachusetts: 1987-90



Health Risk Characteristics and Low Birth Weight among Chinese and Southeast Asian Mothers and Infants: 1987-1990

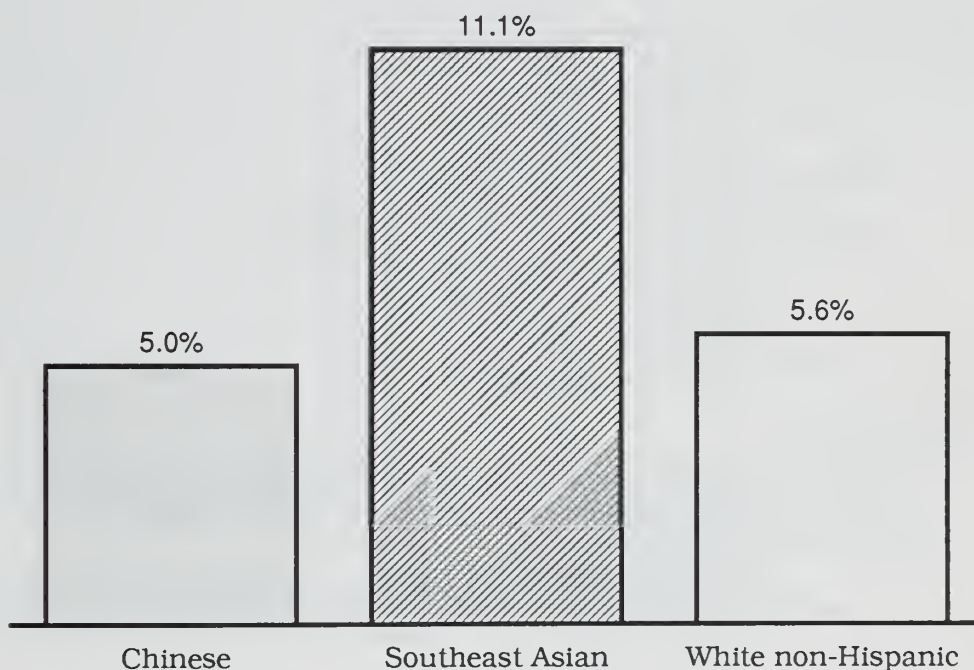


What proportion of Chinese and Southeast Asian births occurred before the 37th week of gestation?

Infants born before the completion of the 37th week of gestation are at greater risk for illnesses and death than are infants who are born at full term. Among Chinese mothers, 5.0% delivered their infants prior to the 37th week of pregnancy (Table 6-1). For Southeast Asian mothers, 11.1% delivered their infants prior to the 37th week of gestation. Among white non-Hispanic mothers, 5.6% delivered their infants prematurely.

Percentage of Premature Chinese, Southeast Asian, and White Non-Hispanic Infants

Massachusetts: 1987-90



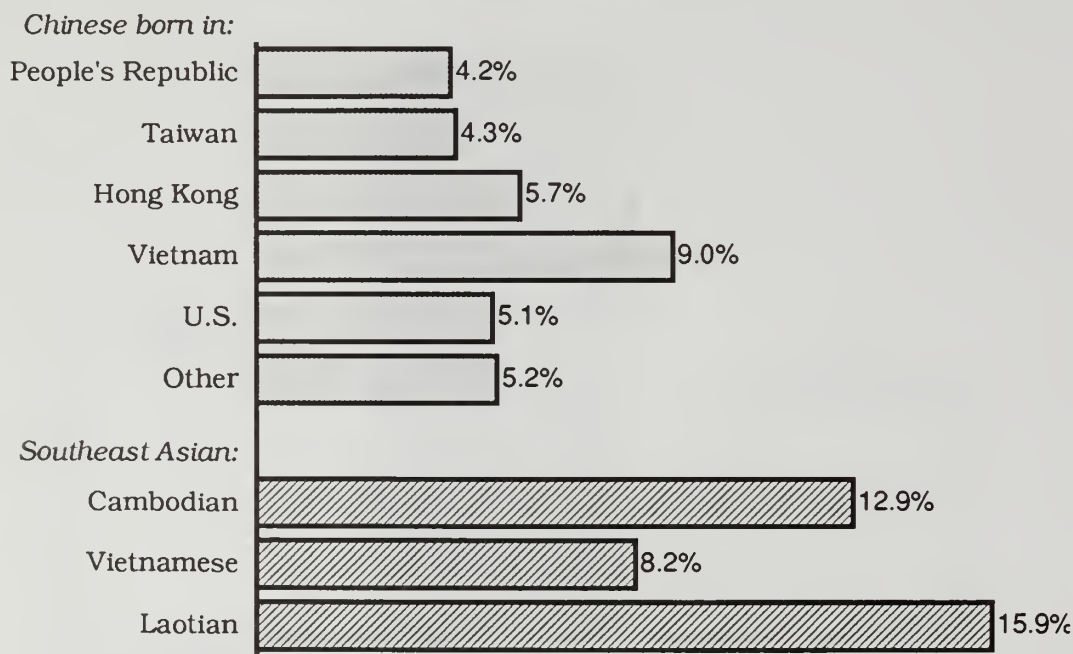
Prematurity: Delivery before the completion of the 37th week of gestation.

How did the proportion of premature infants vary among Chinese and Southeast Asian groups?

Vietnam-born Chinese mothers had a greater proportion of premature births (born before the completion of the 37th week of pregnancy), 9%, than did Chinese women who were born elsewhere (Table 6-1.) Southeast Asian mothers had an extremely high proportion of premature births: 12.9% of Cambodian infants, 8.2% of Vietnamese infants, and 15.9% of Laotian infants were born prior to 37 weeks gestation.

**Percentage of Chinese and Southeast Asian
Infants Delivered Prematurely**

Massachusetts: 1987-90



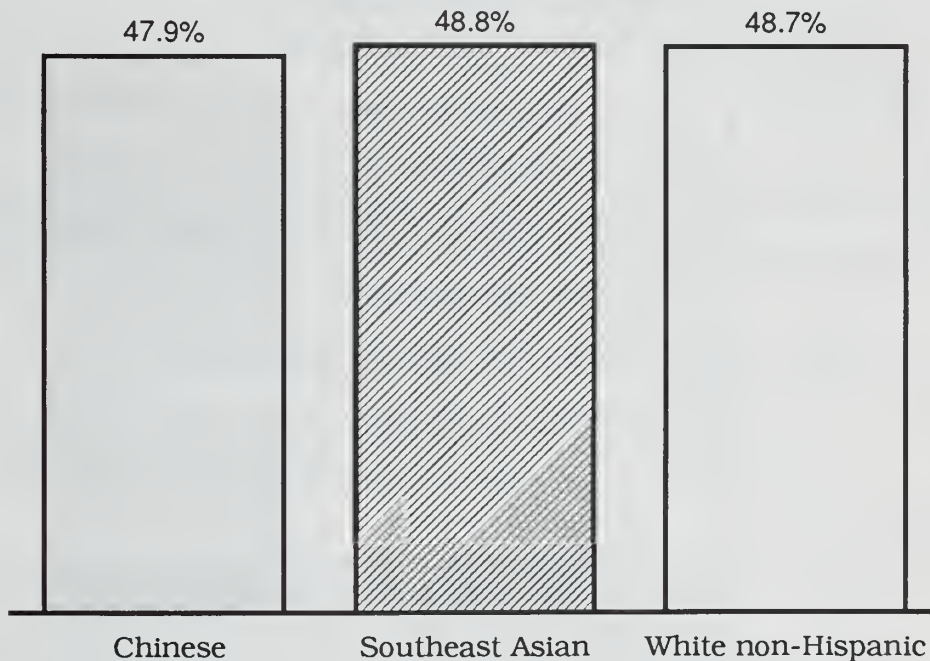
Prematurity: Delivery before the completion of the 37th week of gestation.

What proportion of Chinese and Southeast Asian births were girls?

Population statistics indicate approximately 51.2% of births are males and 48.8% are females. From 1987 through 1990, 49% of all births among white non-Hispanic women were female. Among Chinese mothers, 48% of births were females (Table 6-1). Among Southeast Asian mothers, 49% of births were female.

**Percentage of Female Infants Born to Chinese,
Southeast Asian and White Non-Hispanic Mothers**

Massachusetts: 1987-90

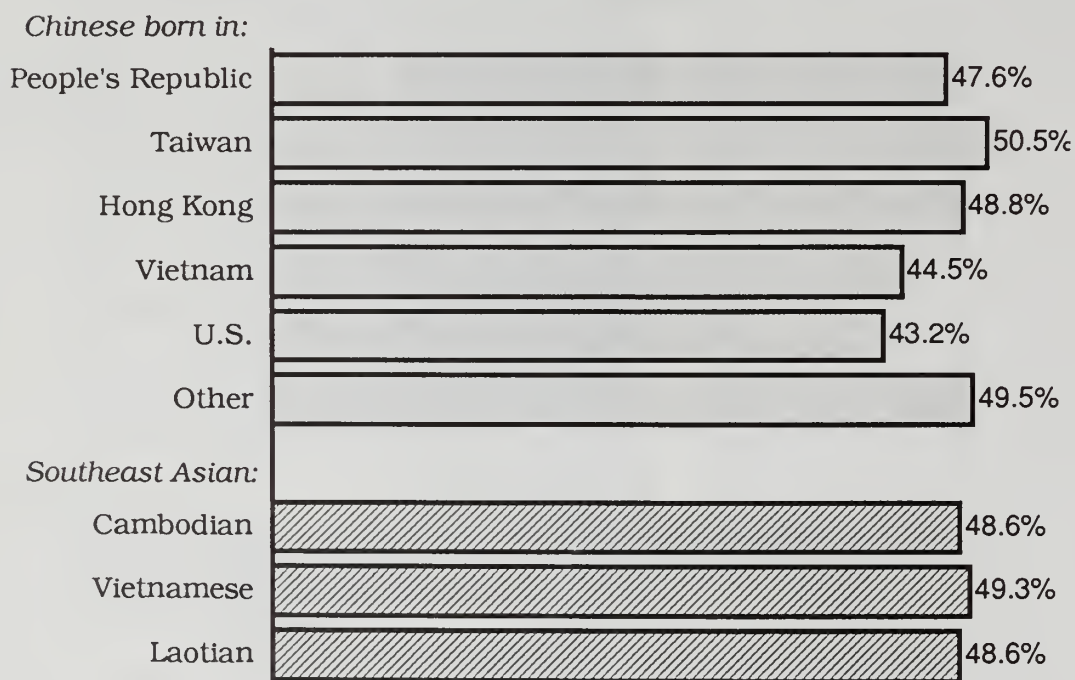


How did the proportion of female infants born vary among Chinese and Southeast Asian groups?

For Chinese mothers, the percentage of female births varied by place of mother's birth: 43% females born to U.S.-born Chinese mothers, 44% among Vietnam-born Chinese mothers, 47.6% among People's Republic of China-born, 48% among Hong Kong-born, and 50% among Taiwan-born (Table 6-1.). The percentage of female births among Southeast Asians varied little.

Percentage of Premature Chinese and Southeast Asian Female Infants

Massachusetts: 1987-90



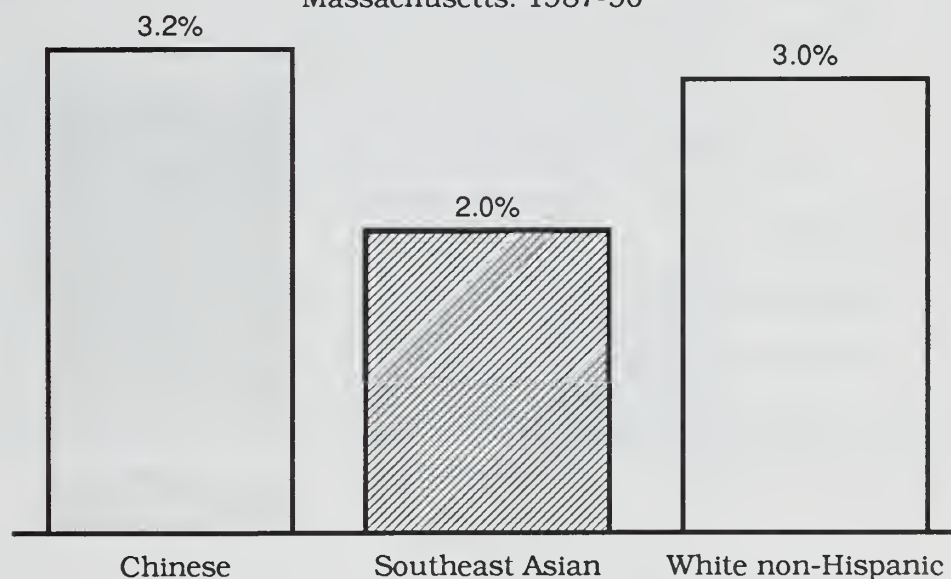
What proportion of Chinese and Southeast Asian infants were born with congenital anomalies? How does this proportion compare with white non-Hispanic infants?

Congenital anomalies are abnormalities in the infant that are present at birth. Some anomalies are minor defects, and others are major abnormalities. Some of the more commonly recognized congenital anomalies include cleft lip, club foot, anencephalus, and spina bifida.

Congenital anomalies were recognized, diagnosed, and reported on 3.2% of the birth certificates of Chinese infants born from 1987 through 1990, 2.0% of birth certificates of Southeast Asian infants, and 3.0% of birth certificates of white non-Hispanic infants (Table 6-1).

Percentage of Chinese, Southeast Asian, and White Non-Hispanic Infants with Congenital Anomalies

Massachusetts: 1987-90



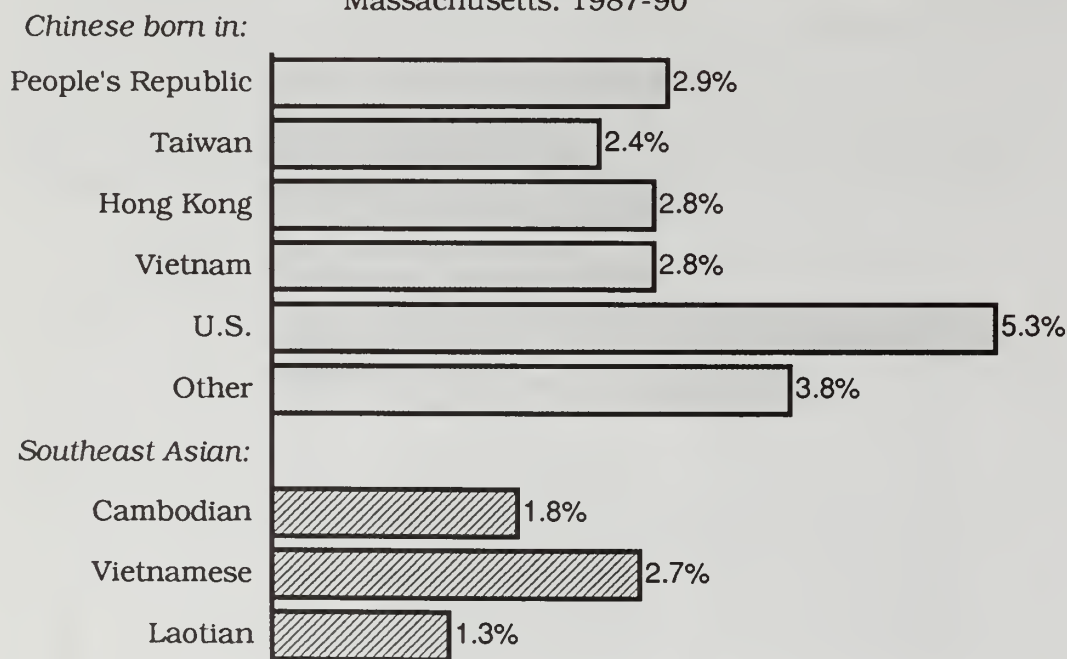
Did the proportion of congenital anomalies vary among Chinese and Southeast Asian groups?

Among infants of U.S.-born Chinese women, 5.3% of their infants had at least one congenital anomaly (Table 6-1). This may reflect the increased incidence of congenital anomalies born to older women. The percentages of infants with at least one congenital anomaly among Chinese women born in the People's Republic of China, Hong Kong, and Vietnam were comparable to the percentage for white non-Hispanic infants.

For Southeast Asian births, the percentage of infants with congenital anomalies was lower than that for white non-Hispanics births. For Cambodian and Vietnamese infants, the percentages were 1.8% and 2.7%. For Laotians, the percentage of congenital anomalies was less than half the white non-Hispanic percentage: 1.3% of Laotian infants vs. 3.0% of white non-Hispanic infants.

**Percentage of Chinese and Southeast Asian
Infants with Congenital Anomalies**

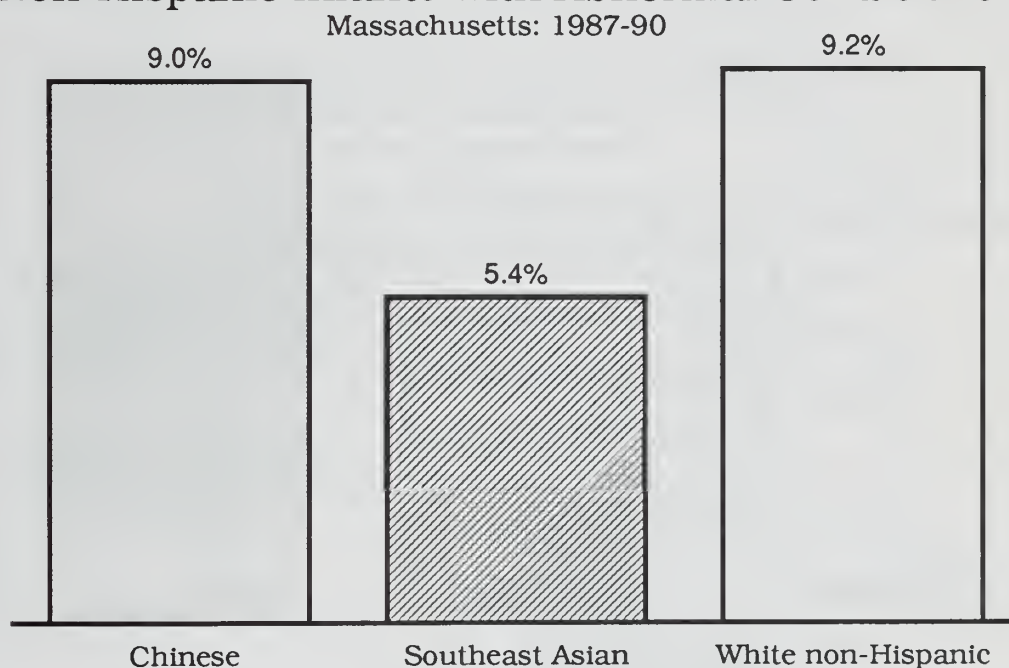
Massachusetts: 1987-90



What proportion of Chinese and Southeast Asian infants were born with abnormal conditions?

From 1987 through 1990, abnormal conditions were recognized, diagnosed, and reported on 9% of the birth certificates of Chinese infants, 5% of birth certificates of Southeast Asian infants, and 9% of birth certificates of white non-Hispanic infants (Table 6-1). Of particular interest was the relatively high incidence of jaundice reported for Chinese infants (5.1%) as compared to white non-Hispanic infants (3.5%) and Southeast Asian infants (1.9%).

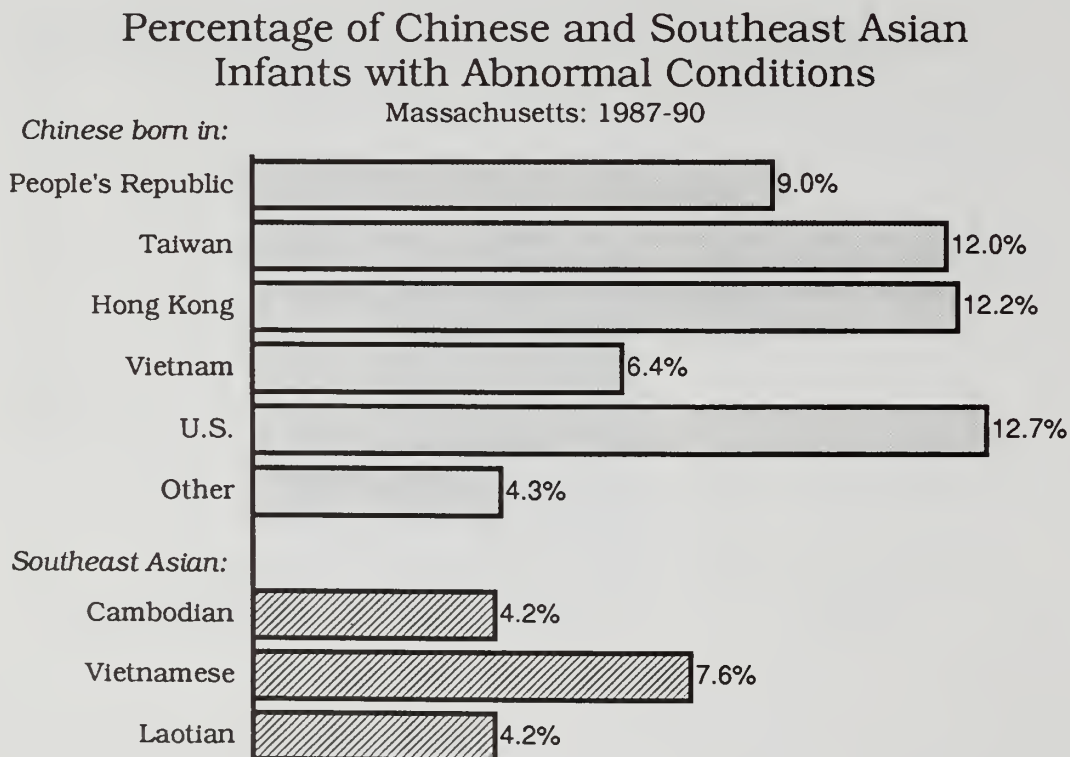
Percentage of Chinese, Southeast Asian, and White Non-Hispanic Infants with Abnormal Conditions



Did the proportion of abnormal conditions vary among Chinese and Southeast Asian groups?

Among infants of U.S.-born Chinese women, 12.7% of the infants had at least one abnormal condition recognized and recorded on the birth certificate (Table 6-1). On the birth certificate of infants of Hong Kong-born and Taiwan-born Chinese mothers, 12.2% and 12%, respectively, had at least one abnormal condition recorded. For all other infants of Chinese mothers, the percentage of birth records that included a report of an abnormal condition was between 4.3% and 9%. Jaundice was most prevalent among infants of Taiwan-born (8.3%) and U.S.-born (7.2%) Chinese mothers.

The percentages of infants with abnormal conditions among Cambodians, Vietnamese, and Laotians, were 4.2%, 7.6%, and 4.2%, respectively.



What proportion of Chinese and Southeast Asian births were low birthweight and very low birthweight?

Low birthweight infants weigh less than 2500 grams (5.5 pounds), and are at increased risk of illness and death. Very low birthweight infants weigh less than 1500 grams (3.3 pounds), and are at even greater risk of illness and death than low birthweight infants.

A smaller percentage of Chinese infants, 4%, were low birthweight than were white non-Hispanic infants, 5%. A higher percentage of Southeast Asian infants were low birthweight, 8%, than either Chinese or white non-Hispanic infants. (See Table 6-3.)

An especially small percentage of Chinese infants, 0.4%, were very low birthweight. The same percentage of Southeast Asian and white non-Hispanic infants were very low birthweight, 0.8%, and this percentage was notably higher than the percentage of very low birthweight Chinese infants.

Percentage of Chinese, Southeast Asian and White Non-Hispanic Infants Born at Very Low Birthweight and Low Birthweight

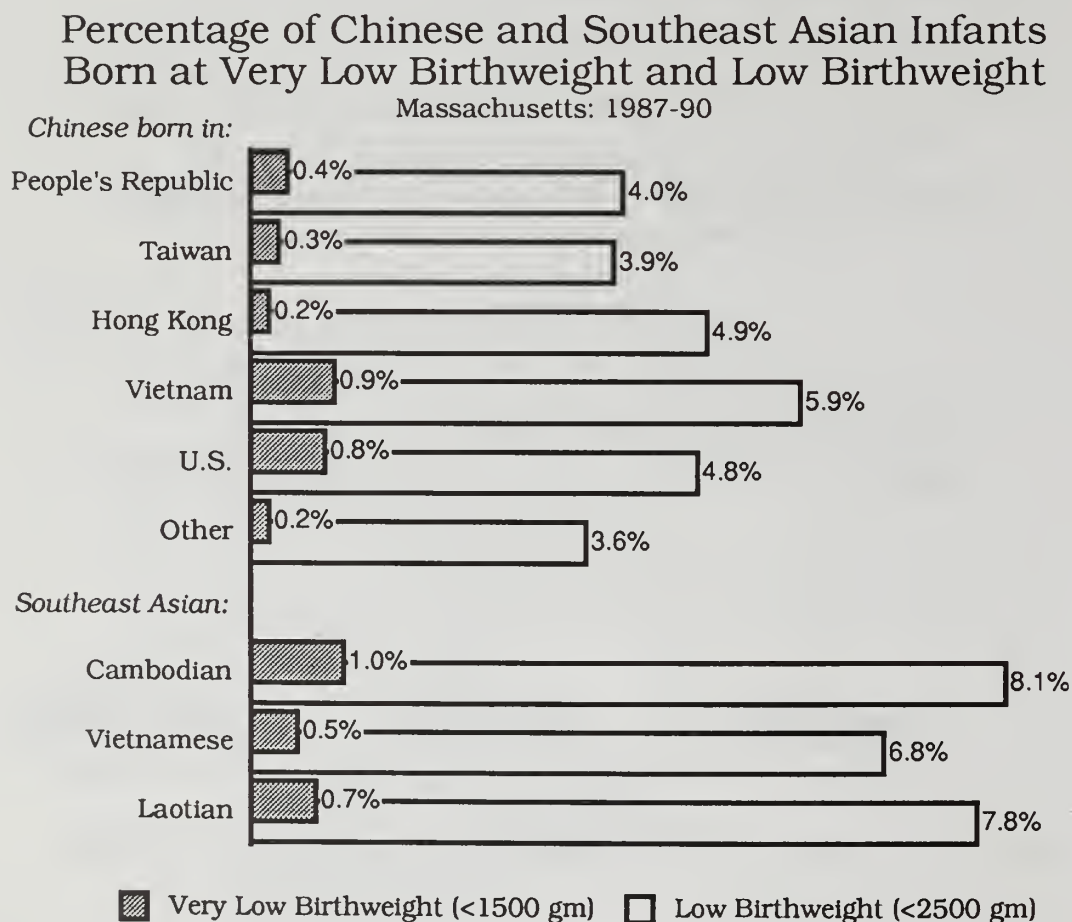
Massachusetts: 1987-90



How did the proportions of low birthweight and very low birthweight vary among Chinese and Southeast Asian groups?

Chinese women (except those born in Vietnam) delivered the lowest proportions of low birthweight infants in Massachusetts. Especially notable were the small percentages of low birthweight infants among Chinese women who were born in the People's Republic and in Taiwan, both 4%. The percentages of low birthweight infants among Chinese women who were born in the U.S. and in Hong Kong were higher, and comparable to the percentages among white non-Hispanic women. Among all Chinese women, those born in Vietnam had the highest percentage of low birthweight infants, 6%.

Cambodian and Laotian women had high percentages of low birthweight infants, 8%.



Do the Chinese and white non-Hispanic low birthweight rates differ among infants with similar characteristics?

A lower percentage of Chinese infants than white non-Hispanic infants were born at low birthweight, which could occur in one of two ways:

First, a lower percentage of Chinese infants than white non-Hispanic infants could have characteristics which put them at risk for low birthweight, but the percentage of low birthweight among Chinese infants and white non-Hispanic infants with the same characteristic could be similar. For example, maternal smoking during pregnancy is related to low birthweight; if fewer Chinese mothers smoked during pregnancy than white non-Hispanic mothers, then the lower percentage of Chinese infants born at low birthweight could result from the lower smoking rates of Chinese mothers. However, the percentage of low birthweight among Chinese infants whose mothers smoked during pregnancy could be similar to the percentage of low birthweight among white non-Hispanic infants whose mothers smoked.

Second and alternatively, Chinese infants could have a lower percentage of low birthweight than white non-Hispanic infants with the same characteristics. For example, a lower percentage of Chinese infants whose mothers smoked during pregnancy could be born at low birthweight than white non-Hispanic infants whose mothers smoked.

One way to analyze the sources of the difference in the Chinese and the white non-Hispanic low birthweight rates is to investigate the percentage of low birthweight among Chinese infants and white non-Hispanic infants with the same characteristics. In order to accomplish this, a series of iterative comparisons were made of the low birthweight percentages among Chinese infants and white non-Hispanic infants with the same maternal, access to prenatal care, and infant characteristics which may contribute to low birthweight. For example, the percentage of low birthweight among Chinese infants whose mothers were less than 20 years of age was compared with the percentage among white non-Hispanic infants whose mothers were less than 20 years of age.

Chinese infants had lower percentages of low birthweight than white non-Hispanic infants for eight of the thirteen maternal, access to prenatal care, and infant characteristics which were examined, and the same percentages of low birthweight for the remaining five characteristics. As an example, lower percentages of Chinese infants who were jaundiced, were female, or were born at early gestational age were born at low birthweight than white non-Hispanic infants with the same characteristics. (See Tables 6-4 through 6-11.)

Risk Factors and Low Birthweight Among the Chinese and White Non-Hispanics: Massachusetts 1987 - 1990			
RISK FACTOR	Chinese Low Birthweight Percent Compared to White Non-Hispanics:		
	Lower	Same	Higher
Maternal characteristics:			
age < 20 years	✓		
education < 9th grade	✓		
married		✓	
gravidity = 1	✓		
nonsmoker		✓	
Caesarean section		✓	
Access to prenatal care:			
adequate prenatal care		✓	
care in physician's office		✓	
care in hospital clinic	✓		
care publicly financed	✓		
Infant characteristics:			
jaundice	✓		
female	✓		
early gestational age	✓		

Do the Southeast Asian and white non-Hispanic low birthweight rates differ among infants with similar characteristics?

Southeast Asian infants had higher percentages of low birthweight than white non-Hispanic infants for nine of thirteen maternal, access to prenatal care, and infant characteristics. For example, higher percentages of Southeast Asian infants whose mothers were under 20 years of age, married, nonsmokers, or had Caesarian section delivery were born at low birthweight than white non-Hispanic infants with the same characteristics.

Risk Factors and Low Birthweight Among Southeast Asians and White non-Hispanics: Massachusetts 1987 - 1990			
Risk Factor	Southeast Asian Low Birthweight Percent Compared to White Non-Hispanics:		
	Lower	Same	Higher
Maternal characteristics: age < 20 years education < 9th grade married gravidity = 1 nonsmoker Caesarean section		✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓
Access to prenatal care: adequate prenatal care care in physician's office care in hospital clinic care publicly financed	✓ ✓	✓	✓ ✓
Infant characteristics: jaundice female early gestational age	✓		✓ ✓

If Chinese births had similar characteristics as white non-Hispanic births on major risk factors for low birthweight, would the Chinese low birthweight rate be similar to the white non-Hispanic low birthweight rate?

Another way to analyze the sources of the difference in the Chinese and the white non-Hispanic low birthweight rates is through statistical manipulation which answers an hypothetical question: If Chinese infants had the same distribution of characteristics as white non-Hispanic infants, what would be the Chinese hypothetical low birthweight rate? In other words, if the same percentage of Chinese infants had mothers who smoked during pregnancy as white non-Hispanic infants, would the Chinese hypothetical low birthweight rate be closer to the white non-Hispanic low birthweight rate? (See Appendix III. Technical Notes for an explanation of the multiple logistic regression technique which was used to answer these questions.)

In order to address this question, a series of statistical analyses were conducted using three characteristics which may contribute to low birthweight: maternal smoking during pregnancy, maternal education, and adequacy of prenatal care. In these analyses, Chinese hypothetical low birthweight rates were computed based on the assumptions that Chinese infants had the same characteristics in maternal smoking, maternal education, and adequacy of prenatal care as white non-Hispanic mothers.

The actual low birthweight rate among Chinese infants was 4.2%, much lower than the white non-Hispanic low birthweight rate of 5.0%.

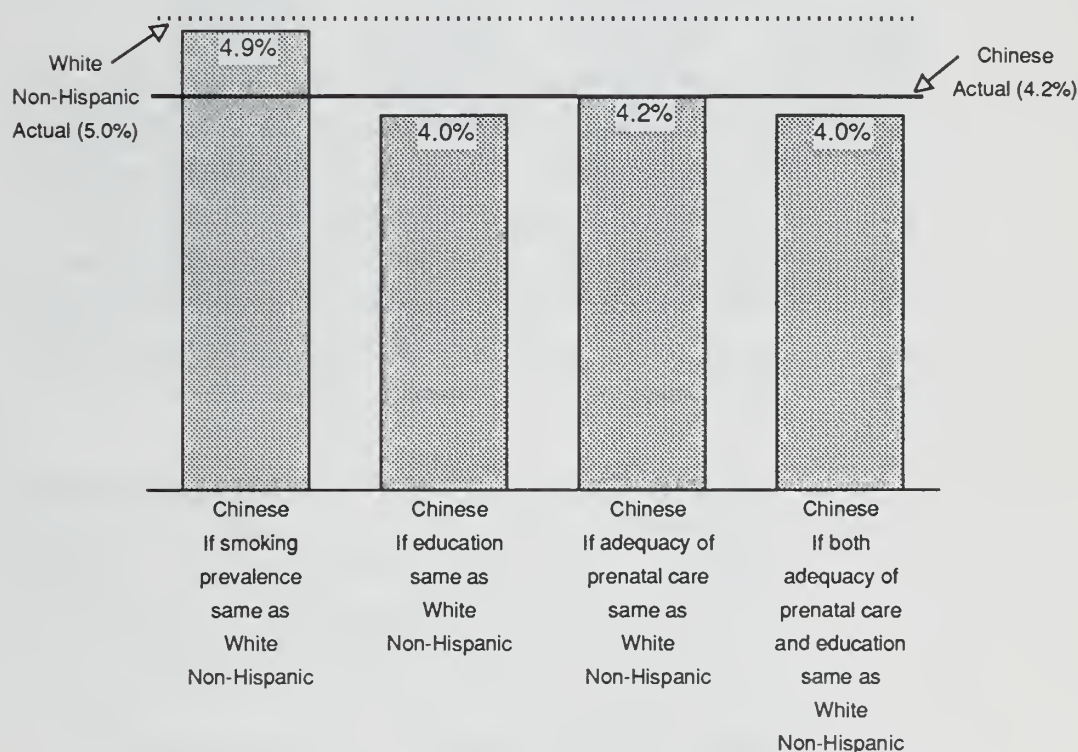
Impact of smoking: Only 2% of Chinese mothers smoked during pregnancy, compared to 21% of white non-Hispanic mothers. If Chinese mothers had smoked during pregnancy at the same rate as white non-Hispanic mothers, then the Chinese hypothetical low birthweight rate would increase to 4.9%.

Impact of education: Overall, Chinese mothers had somewhat lower levels of education than white non-Hispanic mothers: 13% of Chinese mothers had less than nine years of education, compared to 2% of white non-Hispanic mothers; and 59% of Chinese mothers had graduated from college, compared to 67% of white non-Hispanic mothers. If Chinese mothers had the same levels of education as white non-Hispanic mothers, then the Chinese hypothetical low birthweight rate would decrease to 4%.

Impact of adequacy of prenatal care: The percentage of Chinese mothers who received adequate prenatal care, 78%, was only slightly lower than the percentage of white non-Hispanic mothers receiving adequate prenatal care, 82%. If Chinese mothers had the same level of adequacy of prenatal care as white non-Hispanic mothers, then the Chinese hypothetical low birthweight rate would remain the same as the actual rate of 4.2%

Impact of both education and adequacy combined: If Chinese mothers had the same levels of both education and adequacy of prenatal care as white non-Hispanic mothers, then the Chinese hypothetical low birthweight rate would decrease to 4%.

Percentage of Chinese Infants Born at Low Birthweight Hypothetical Scenarios



If Cambodian births had similar characteristics as white non-Hispanic births on major risk factors for low birthweight, would the Cambodian low birthweight rate be similar to the white non-Hispanic low birthweight rate?

The actual low birthweight rate among Cambodian infants was 8.1%, much higher than the white non-Hispanic low birthweight rate of 5.0%.

Impact of smoking: Only 2.4% of Cambodian mothers smoked during pregnancy, compared to 21% of white non-Hispanic mothers. If Cambodian mothers had smoked during pregnancy at the same rate as white non-Hispanic mothers, then the Cambodian hypothetical low birthweight rate would increase to 9.3%.

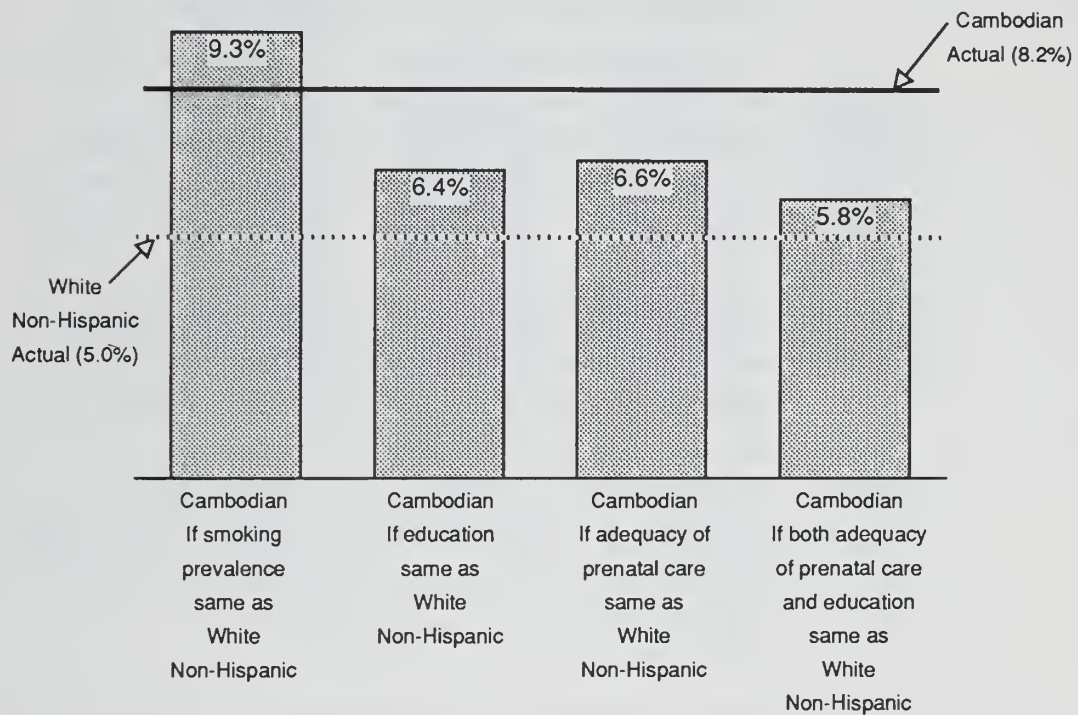
Impact of education: Overall, Cambodian mothers had much lower levels of education than white non-Hispanic mothers: 77% of Cambodian mothers had less than nine years of education, compared to 2% of white non-Hispanic mothers. If Cambodian mothers had the same levels of education as white non-Hispanic mothers, then the Cambodian hypothetical low birthweight rate would decrease to 6.4%.

Impact of adequacy of prenatal care: The percentage of Cambodian mothers who received adequate prenatal care, 37%, was less than half the percentage of white non-Hispanic mothers receiving adequate prenatal care, 82%. If Cambodian mothers had the same level of adequacy of prenatal care as white non-Hispanic mothers, then the Cambodian hypothetical low birthweight rate would decrease to 6.6%.

Impact of both education and adequacy combined:

If Cambodian mothers had the same levels of both education and adequacy of prenatal care as white non-Hispanic mothers, then the Cambodian hypothetical low birthweight rate would decrease to 5.8%.

Percentage of Cambodian Infants Born at Low Birthweight Hypothetical Scenarios



If Vietnamese births had similar characteristics as white non-Hispanic births on major risk factors for low birthweight, would the Vietnamese low birthweight rate be similar to the white non-Hispanic low birthweight rate?

The actual low birthweight rate among Vietnamese infants was 6.8%, higher than the white non-Hispanic low birthweight rate of 5.0%:

Impact of smoking: Only 2.5% of Vietnamese mothers smoked during pregnancy, compared to 21% of white non-Hispanic mothers. If Vietnamese mothers had smoked during pregnancy at the same rate as white non-Hispanic mothers, then the Vietnamese hypothetical low birthweight rate would increase to 7.8%.

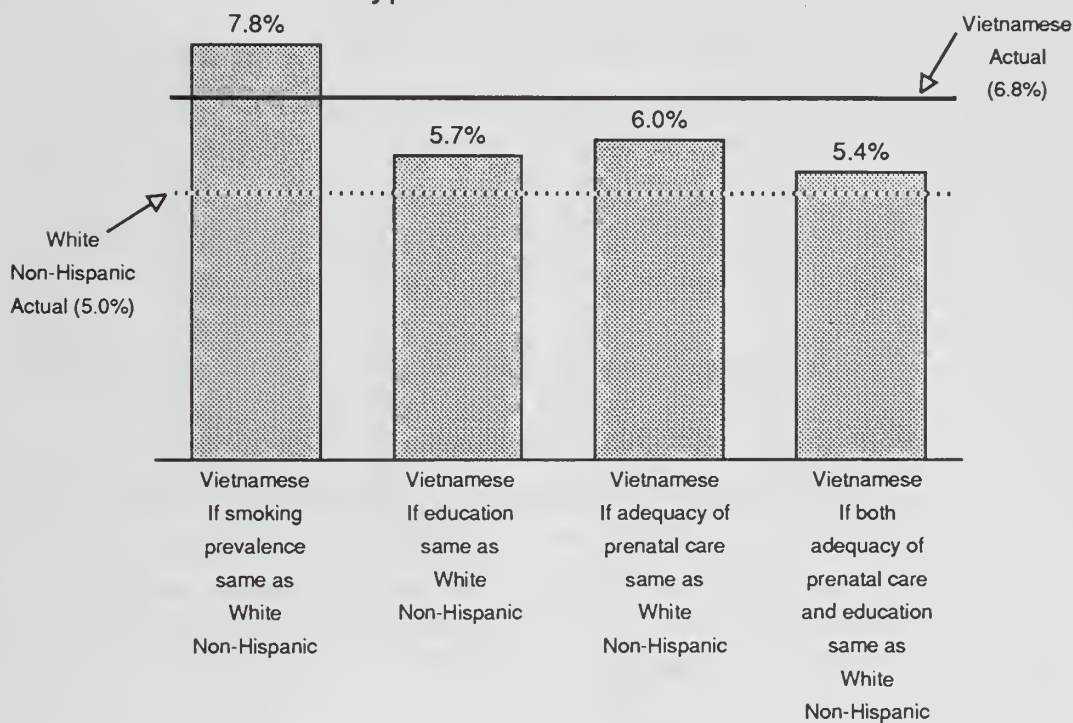
Impact of education: Overall, Vietnamese mothers had much lower levels of education than white non-Hispanic mothers: 43% of Vietnamese mothers had less than nine years of education, compared to 2% of white non-Hispanic mothers. If Vietnamese mothers had the same levels of education as white non-Hispanic mothers, then the Vietnamese hypothetical low birthweight rate would decrease to 5.7%.

Impact of adequacy of prenatal care: The percentage of Vietnamese mothers who received adequate prenatal care, 57%, was much less than the percentage of white non-Hispanic mothers receiving adequate prenatal care, 82%. If Vietnamese mothers had the same level of adequacy of prenatal care as white non-Hispanic mothers, then the Vietnamese hypothetical low birthweight rate would decrease to 6.0%.

Impact of both education and adequacy combined:

If Vietnamese mothers had the same levels of both education and adequacy of prenatal care as white non-Hispanic mothers, then the Vietnamese hypothetical low birthweight rate would decrease to 5.4%.

Percentage of Vietnamese Infants Born at Low Birthweight
Hypothetical Scenarios



If Laotian births had similar characteristics as white non-Hispanic births on major risk factors for low birthweight, would the Laotian low birthweight rate be similar to the white non-Hispanic low birthweight rate?

The actual low birthweight rate among Laotian infants was 7.8%, higher than the white non-Hispanic low birthweight rate of 5.0%:

Impact of smoking: Only 2.5% of Vietnamese mothers smoked during pregnancy, compared to 21% of white non-Hispanic mothers. If Laotian mothers had smoked during pregnancy at the same rate as white non-Hispanic mothers, then the Laotian hypothetical low birthweight rate would increase to 9.0%.

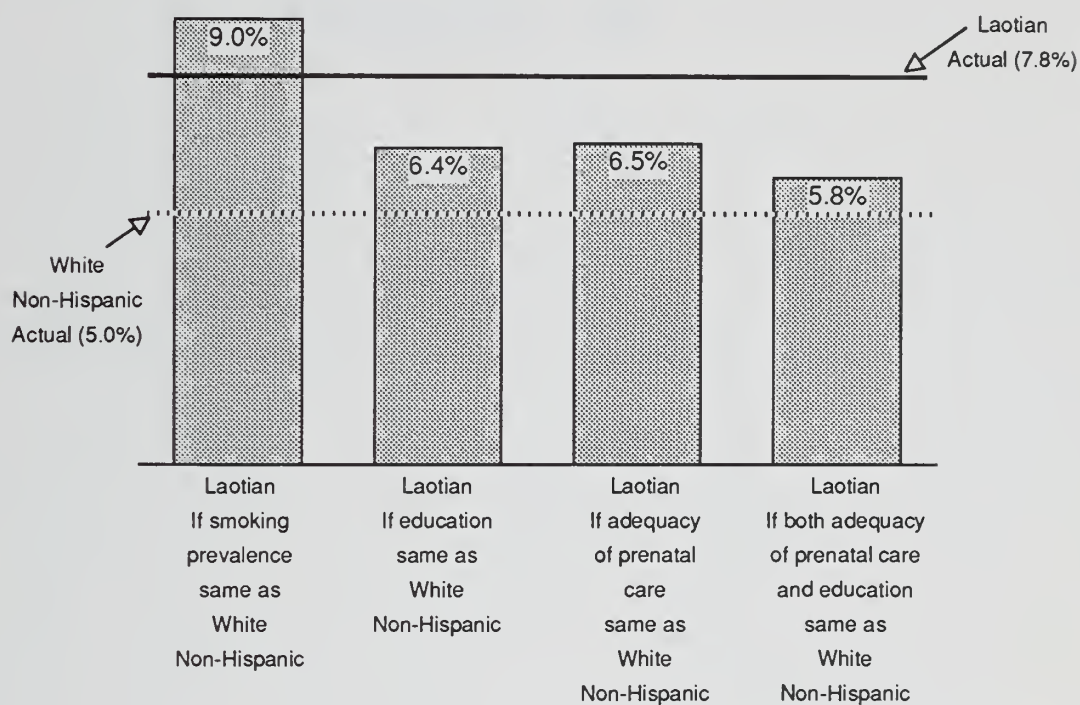
Impact of education: Overall, Laotian mothers had much lower levels of education than white non-Hispanic mothers: 60% of Laotian mothers had less than nine years of education, compared to 2% of white non-Hispanic mothers. If Laotian mothers had the same levels of education as white non-Hispanic mothers, then the Laotian hypothetical low birthweight rate would decrease to 6.4%.

Impact of adequacy of prenatal care: The percentage of Laotian mothers who received adequate prenatal care, 44%, was much less than the percentage of white non-Hispanic mothers receiving adequate prenatal care, 82%. If Laotian mothers had the same level of adequacy of prenatal care as white non-Hispanic mothers, then the Laotian hypothetical low birthweight rate would decrease to 6.5%.

Impact of both education and adequacy combined:

If Laotian mothers had the same levels of both education and adequacy of prenatal care as white non-Hispanic mothers, then the Laotian hypothetical low birthweight rate would decrease to 5.8%.

Percentage of Laotian Infants Born at Low Birthweight
Hypothetical Scenarios





APPENDIX I

DETAILED TABLES

(For Chapters 1 - 6)



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Table 1-1: Asians by Selected Communities ¹: Massachusetts 1990

Community	Total Asians ²	Chinese	Cambodian	Vietnamese	Laotian	Community Population	
						Total	% Asian
State	143 392	53 792	14 050	15 449	3 985	6 016 425	2.4
Boston	30 388	16 701	1 002	4 754	289	574 283	5.3
Lowell	11 493	779	6 475	743	1 553	103 439	11.1
Cambridge	8 081	3 616	23	216	8	95 802	8.4
Quincy	5 577	4 153	49	567	0	84 985	6.6
Worcester	4 770	694	170	2 391	199	169 759	2.8
Brookline	4 585	2 662	36	133	4	54 718	8.4
Newton	3 760	2 211	32	123	16	82 585	4.6
Lynn	3 003	153	1 758	381	320	81 245	3.7
Somerville	2 824	1 091	29	277	15	76 210	3.7
Malden	2 815	1 584	120	467	15	53 884	5.2
Amherst	2 773	1 219	192	113	5	35 228	7.9
Waltham	2 055	666	8	186	56	57 878	3.6

Source: U.S. Bureau of Census.

¹ Communities with at least 2,000 Asian residents are included in this table.

² Asians include: Chinese, Filipino, Japanese, Asian Indian, Korean, Vietnamese, Cambodian, Hmong, Laotian, Thai and other Asians such as Burmese, Pakistani and 17 other groups.

Table 1-2: Percent Change in the Asian Population from 1980 to 1990, Selected Massachusetts Communities¹

Community	Total Asians	Chinese	Vietnamese	Total Population
Percent Change				
State	+ 194.0	+ 115.0	+ 387.7	+ 4.9
Boston	100.6	1080.3	381.7	2.0
Lowell	1 802.8	240.0	666.0	11.9
Cambridge	123.7	130.2	222.4	0.6
Quincy	653.6	1 257.2	772.3	0.3
Worcester	389.7	219.8	668.8	4.9
Brookline	72.2	37.9	358.6	- 0.6
Newton	121.6	123.8	53.8	- 1.2
Lynn	1 350.7	86.6	5 342.9	3.5
Somerville	298.3	245.3	965.4	- 1.5
Malden	851.0	1 167.2	1 930.4	0.9
Amherst	304.8	254.4	151.1	6.0
Waltham	229.9	198.7	342.9	- 0.6

Source: US Bureau of the Census.

¹ Cambodian and Laotian data are not available.

Table 1-3: Age Distribution of the Asian Population: Massachusetts 1980 and 1990 ¹

	Total Asian		Chinese		Vietnamese		Total State	
	1980	1990	1980	1990	1980	1990	1980	1990
Age in Years								
<20	32.6%	34.0%	29.3%		44.3%		30.0%	25.9%
20 - 24	10.9	11.6	12.2	Not	12.2	Not	9.6	8.6
25 - 29	11.9	11.5	12.2	Available	13.4	Available	8.5	9.3
30 - 34	11.6	11.0	10.5		11.3		7.9	9.0
35+	33.0	31.9	35.7		18.8		44.0	47.2
Median age	27.7	27.3	28.5		22.5		31.2	33.6

Source: U.S. Bureau of the Census.

¹ Cambodian and Laotian data are not available.

Table 1-4: Income and Poverty of the Asian Population: Massachusetts 1980 and 1990

	Total Asian		Chinese		Vietnamese		Total State	
	1980	1990	1980	1990	1980	1990	1980	1990
Income								
Mean household income	\$20,847	\$43,887	\$19,916	N A	\$12,525	N A	\$20,744	\$39,445*
Poverty								
% below poverty	16.3	19.7	12.3		39.7		7.6	8.9
% below 125% poverty	22.4	N A	19.5		49.0		10.5	12.0
% unemployed	4.6	6.4	4.4		8.0		5.1	6.7

* Weighted mean household income figure

Source: U.S. Bureau of the Census.

Table 2-1. Distribution of Asian Births by Community¹: Massachusetts 1987-1990

	CHINESE							SOUTHEAST ASIAN			TOTAL
	People's Republic	Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian	Vietnamese	Laotian	
Boston	624	59	100	101	70	181	1 135	173	621	37	1 960
Lowell	13	55	6	0	1	20	95	1 193	78	185	1 551
Worcester	19	11	4	2	2	14	52	37	311	31	431
Lynn	1	1	2	2	7	3	16	318	34	38	406
Quincy	161	7	39	21	13	49	290	15	54	1	360
Revere	8	1	0	0	0	3	12	210	8	0	230
Chelsea	11	2	0	6	1	3	23	128	71	0	222
Malden	76	6	13	20	6	19	140	17	56	4	217
Cambridge	72	55	10	2	15	22	176	2	20	0	198
Lawrence	3	0	0	6	1	4	14	60	79	1	154
Brookline	35	15	32	0	24	18	124	3	7	0	134
Fitchburg	0	1	1	0	1	2	5	1	21	102	129
Newton	38	16	18	2	25	15	114	4	5	2	125
Somerville	45	14	7	4	3	7	80	12	32	1	125
Brockton	8	1	3	16	6	14	48	12	24	22	106
Fall River	3	1	2	0	0	2	8	94	1	2	105
Other towns	273	345	189	43	195	279	1 324	206	367	125	2 022
TOTAL	1 390	590	426	218	377	655	3 656	2 485	1 789	551	8 481

¹ Cities and towns with 100 or more Asian births from 1987-1990 are included in the table.

Table 2-2. Distribution of Asian Births by Year: Massachusetts 1987-1990

CHINESE												SOUTHEAST ASIAN				TOTAL
People's Republic		Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian	Vietnamese	Laotian						
1987	200	93	29	34	96	295	747	501	344	72	1 664					
1988	327	158	130	61	80	176	932	629	436	127	2 124					
1989	435	173	130	68	83	91	980	661	468	183	2 292					
1990	428	166	137	55	118	93	997	694	541	169	2 401					
TOTAL	1 390	590	426	218	377	655	3 656	2 485	1 789	551	8 481					

Table 2-3. Distribution of Asian Births by Hospital¹: Massachusetts 1987-1990

	People's Republic	CHINESE					SOUTHEAST ASIAN				TOTAL
		Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian	Vietnamese	Laotian	
Beth Israel	777	83	144	137	72	217	1 430	64	192	4	1 690
Lowell General	16	62	6	1	2	31	118	1 051	74	164	1 407
Brigham & Women's	223	126	117	6	80	58	610	50	160	8	828
St. Elizabeth's	46	16	26	6	23	41	158	109	157	21	445
St. Margaret's	32	10	13	6	16	30	107	44	219	8	378
Malden	12	7	8	5	8	20	60	138	69	2	269
St. Vincent	3	16	1	2	4	14	40	17	157	27	241
Med Cntr of Central MA-Memorial	15	16	4	0	3	8	46	13	159	9	227
Cambridge	7	3	2	1	0	4	17	168	16	0	201
Lynn (now Union)	0	2	0	0	3	0	5	151	17	13	186
Salem	2	0	3	2	8	1	16	114	33	18	181
Newton-Wellesley	32	28	17	1	39	22	139	2	15	1	157
Lawrence General	4	4	2	4	0	5	19	64	70	1	154
Baystate Medical Center	16	8	6	9	8	15	62	21	48	17	148
Boston City	25	3	0	0	0	3	31	20	79	7	137
St. Joseph's	1	11	2	0	0	4	18	86	5	18	127
Mount Auburn	28	11	11	4	18	10	82	17	19	1	119
Cooley Dickinson	27	20	2	0	4	17	70	29	7	0	106
Emerson	6	45	6	0	12	16	85	1	18	2	106
Charlton Memorial	4	0	3	0	0	3	10	93	1	0	104
Other hospitals	114	119	53	34	77	136	533	233	274	230	1 270
TOTAL	1 390	590	426	218	377	655	3 656	2 485	1 789	551	8 481

¹ Hospitals with 100 or more Asian births from 1987-1990 are included in the table.

Table 3-1. Percent Distribution of Demographic Characteristics of Mothers by Ethnicity: Massachusetts 1987-1990

	People's Republic	CHINESE					SOUTHEAST ASIAN				WHITE NON-HISPANIC
		Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian	Vietnamese	Laotian	
Births	1 390	590	426	218	377	655	3 656	2 485	1 789	551	283 700
Age, in years	0.6%	- ¹	1.2%	2.3%	2.4%	0.8%	1.0%	15.9%	10.8%	21.4%	6.2%
<20	11.3	2.4%	4.9	15.6	6.6	9.3	8.5	33.6	25.7	37.4	18.6
20-24	35.9	33.1	37.8	45.0	25.7	33.4	34.7	21.9	27.4	27.2	34.3
25-29	35.5	47.5	42.7	24.3	40.3	42.0	39.3	16.2	22.5	9.4	28.9
30-34	14.8	15.9	12.9	10.1	22.0	13.9	15.1	8.6	11.2	3.8	10.4
35-39	1.7	0.8	-	2.8	2.9	-	1.4	3.9	2.5	-	1.5
40+											
Education, grade ²	18.4%	-	5.2%	59.6%	-	11.7%	13.0%	76.6%	42.9%	60.1%	2.3%
<9	32.9	5.8%	10.7	15.3	-	12.8	17.7	14.9	22.6	19.7	11.2
9-11	9.3	6.0	11.0	9.3	7.2%	19.3	10.6	3.9	11.2	10.1	19.3
12	39.4	87.7	73.1	15.8	91.1	56.2	58.7	4.6	23.2	10.1	67.3
13+											
Marital status	98.4%	98.8%	97.9%	86.2%	94.7%	96.0%	96.9%	48.9%	59.8%	70.4%	83.9%
married	1.6	1.2	2.1	13.8	5.3	4.0	3.1	51.1	40.2	29.6	16.1
not married											

¹ Calculations based on fewer than five events are excluded.

² Women 20 years of age and older.

Table 3-2. Distribution of the Number of Mothers by Demographic Characteristics by Ethnicity: Massachusetts 1987-1990

	CHINESE				SOUTHEAST ASIAN				WHITE NON-HISPANIC		
	People's Republic	Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian		Vietnamese	Laotian
Births	1 390	590	426	218	377	655	3 656	2 485	1 789	551	283 700
Age, in years											
<20	9	2	5	5	9	5	35	396	193	118	17 587
20-24	157	14	21	34	25	61	312	834	459	206	52 907
25-29	499	195	161	98	97	219	1 269	543	491	150	97 304
30-34	494	280	182	53	152	275	1 436	403	402	52	81 939
35-39	206	94	55	22	83	91	551	213	200	21	29 525
40+	24	5	2	6	11	4	52	96	44	4	4 345
Education, grade ¹											
<9	223	3	19	109	2	75	431	1 695	637	268	5 413
9-11	400	33	39	28	4	82	586	330	335	88	26 331
12	113	34	40	17	25	124	353	86	167	45	45 438
13+	479	497	266	29	316	361	1 948	101	345	45	158 574
Marital status											
married	1 367	583	417	188	357	629	3 541	1 214	1 070	388	238 128
not married	23	7	9	30	20	26	115	1 271	719	163	45 572

¹ Women 20 years of age and older.

Table 4-1. Percent Distribution of Medical and Biological Characteristics of Mothers by Ethnicity: Massachusetts 1987-1990

SOUTHEAST ASIAN												WHITE NON- HISPANIC
CHINESE												
	People's Republic	Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian	Vietnamese	Laotian		
Births	1 390	590	426	218	377	655	3 656	2 485	1 789	551	283 700	
Gravidity												
1	47.9%	46.0%	48.0%	43.3%	44.0%	47.7%	46.9%	34.8%	41.0%	39.0%	37.3%	
2-3	45.1	47.4	45.6	41.5	43.4	46.2	45.3	36.7	41.2	39.6	49.5	
4+	7.0	6.6	6.4	15.2	12.6	6.1	7.8	28.5	17.8	21.4	13.2	
Smoking												
no	98.9%	98.8%	97.7%	99.5%	93.9%	98.2%	98.1%	97.6%	97.5%	97.5%	79.3%	
yes	1.1	1.2	2.3	.1	6.1	1.8	1.9	2.4	2.5	2.5	20.7	
Maternal conditions:												
hepatitis B carrier	24.3%	25.6%	23.2%	23.4%	27.9%	21.2%	24.1%	24.4%	24.6%	24.7%	25.3%	
diabetes	6.0	3.9	2.1	8.3	.1	2.3	4.2	4.9	4.9	5.8	0.1	
anemia	2.4	2.7	3.1	2.8	2.4	3.2	2.7	0.7	1.7	-	1.3	
	2.2	2.5	1.6	2.3	2.4	0.8	1.9	3.7	2.1	3.3	1.3	
Caesarean section	18.4%	19.5%	22.6%	15.7%	19.1%	23.0%	19.8%	9.0%	14.0%	7.4%	24.1%	

¹ Calculations based on fewer than five events are excluded.

Table 4-2. Distribution of the Number of Mothers by Medical and Biological Characteristics by Ethnicity: Massachusetts 1987-1990

	CHINESE				SOUTHEAST ASIAN				WHITE NON- HISPANIC		
	People's Republic	Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian	Vietnamese	Laotian	
Births	1 390	590	426	218	377	655	3 656	2 485	1 789	551	283 700
Gravidity											
1	661	271	202	94	164	307	1 699	854	720	211	104 738
2-3	622	279	192	90	162	298	1 643	902	725	214	138 952
4+	97	39	27	33	47	39	282	701	312	116	37 003
Smoking											
no	1 375	583	416	217	353	643	3 587	2 425	1 744	537	225 084
yes	15	7	10	1	23	12	68	60	45	14	58 621
Maternal conditions:											
hepatitis B carrier	336	150	99	51	105	139	880	606	440	136	71 738
diabetes	83	23	9	18	4	15	152	121	88	32	169
anemia	33	16	13	6	9	21	98	18	30	1	3 592
	30	15	7	5	9	5	71	93	38	18	3 715
Caesarean Section	253	114	96	34	71	147	715	224	249	41	67 445

Table 5-1. Percent Distribution of Prenatal Care Characteristics of Mothers by Ethnicity: Massachusetts 1987-1990

	CHINESE					SOUTHEAST ASIAN				WHITE	
	People's Republic	Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian	Vietnamese	Laotian	Non-Hispanic
Births	1 390	590	426	218	377	655	3 656	2 485	1 789	551	283 700
Adequate prenatal care	75.3%	80.8%	84.5%	69.3%	85.9%	76.8%	78.3%	37.1%	57.4%	43.6%	81.5%
Payment source											
private	66.2%	85.5%	82.9%	43.2%	93.0%	75.3%	74.3%	27.2%	38.5%	50.8%	81.0%
public	29.1	8.6	9.0	53.1	5.7	18.8	20.6	70.6	59.2	46.8	16.0
self	3.1	5.6	7.4	2.8	- ¹	4.2	4.0	0.5	1.2	1.1	2.1
Site of care											
physician's office	31.4%	58.6%	59.9%	26.4%	69.7%	53.0%	46.6%	26.2%	35.4%	55.0%	79.2%
hospital clinic	11.2	14.6	6.1	7.9	4.0	11.1	10.2	50.4	32.2	28.5	7.0
HMO/other	10.7	17.8	19.7	7.3	23.1	13.4	14.5	6.8	9.9	9.4	10.6
com. health center	46.5	8.9	14.2	58.3	3.2	22.3	28.6	16.6	22.3	7.0	3.0

¹ Calculations based on fewer than five events are excluded.

Table 5-2. Distribution of the Number of Mothers by Prenatal Care Characteristics by Ethnicity: Massachusetts 1987-1990

		CHINESE					SOUTHEAST ASIAN					WHITE	
		People's Republic	Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian	Vietnamese	Laotian	Non- Hispanic	Hispanic
Births		1 390	590	426	218	377	655	3 656	2 485	1 789	551	283 700	
Adequate prenatal care		1 047	477	360	151	324	503	2 862	921	1 027	240	231 125	
Payment source													
private		910	500	350	92	344	481	2 677	666	680	276	224 782	
public		400	50	38	113	21	120	742	1 727	1 046	254	44 363	
self		43	33	31	6	4	27	144	13	22	6	5 729	
Site of Care													
physician's office		434	342	254	57	262	344	1 693	643	627	301	221 050	
hospital clinic		155	85	26	17	15	72	370	1 236	570	156	19 417	
HMO/other		149	105	84	16	87	88	529	169	178	52	30 009	
com. health center		642	52	60	126	12	145	1 037	407	395	38	8 520	

Table 6-1. Percent Distribution of Infant Risk Characteristics by Ethnicity: Massachusetts 1987-1990

		CHINESE				SOUTHEAST ASIAN				WHITE NON- HISPANIC	
People's Republic		Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian	Vietnamese	Laotian	
Births	1 390	590	426	218	377	655	3 656	2 485	1 789	551	283 700
Congenital anomalies	2.9%	2.4%	2.8%	2.8%	5.3%	3.8%	3.2%	1.8%	2.7%	1.3%	3.0%
Abnormal conditions	9.0	12.0	12.2	6.4	12.7	4.3	9.2	4.2	7.6	4.2	9.2
jaundice	4.6	8.3	7.0	-	7.2	2.0	5.1	1.2	3.2	1.5	3.5
Sex of infant: female	47.6	50.5	48.8	44.5	43.2	49.5	47.9	48.6	49.3	48.6	48.7
Early gestational age	4.2	4.3	5.7	9.0	5.1	5.2	5.0	12.9	8.2	15.9	5.6

¹ Calculations based on fewer than five events are excluded.

Table 6-2. Distribution of the Number of Infants with Health Risk Characteristics by Ethnicity: Massachusetts 1987-1990

		CHINESE				SOUTHEAST ASIAN				WHITE NON- HISPANIC	
People's Republic		Taiwan	Hong Kong	Vietnam	U.S.	Other	Total	Cambodian	Vietnamese	Laotian	
Births	1 390	590	426	218	377	655	3 656	2 485	1 789	551	283 700
Congenital anomalies	40	14	12	6	20	25	117	44	47	7	8 510
Abnormal conditions	124	70	52	14	48	28	336	104	136	23	26 058
jaundice	64	49	30	2	27	13	185	29	57	8	10 049
Sex of infant: female	662	298	208	97	163	324	1 752	1 207	882	268	138 120
Early gestational age	57	25	24	19	19	32	176	307	146	84	15 515

Table 6-3. Low Birthweight ¹ by Ethnicity: Massachusetts 1987-1990

Race/ethnicity group	Percent Low Birthweight (grams)			
	<1500 ²	#	<2500	#
Chinese: Total	0.4	15	4.2	154
People's Republic	0.4	6	4.0	56
Taiwan	- ³	2	3.9	23
Hong Kong	-	1	4.9	21
Vietnam	-	2	5.9	13
U.S.	-	3	4.8	18
Other	-	1	3.6	23
Cambodian	1.0	24	8.1	201
Vietnamese	0.5	9	6.8	121
Laotian	-	4	7.8	43
White non-Hispanic	0.8	2 218	5.0	14 158

¹ An infant weighing less than 2500 grams (5.5 lbs).

² An infant weighing less than 1500 grams (3.3 lbs) at birth is defined as very low birthweight.

³ Calculations based on fewer than five events are excluded.

Table 6-4. Percent Distribution of Low Birthweight Infants by Demographic Characteristics of Mothers by Ethnicity: Massachusetts 1987-1990

	CHINESE	SOUTHEAST ASIAN			WHITE NON-HISPANIC
		Cambodian	Vietnamese	Laotian	
Low birthweight infants	4.2%	8.1%	6.8%	7.8%	5.0%
Age, in years					
<20	¹	8.4%	8.3%	6.9%	6.8%
20-24	4.8%	9.8	6.8	9.2	5.3
25-29	4.4	6.3	7.1	9.4	4.5
30-34	3.6	6.7	6.0	-	4.7
35-39	5.1	7.5	4.0	-	5.6
40+	-	9.4	15.9	-	6.5
Education, grade ²					
<9	3.5%	7.2%	7.7%	7.5%	7.0%
9-11	4.5	9.7	6.6	6.8	7.6
12	6.0	11.6	3.6	9.1	5.5
13+	4.0	9.9	4.4	-	4.2
Marital status					
married	4.3%	7.8%	6.0%	8.1%	4.4%
not married	-	8.4	8.0	7.4	7.9

¹ Calculations based on fewer than five events are excluded.

² Women 20 years of age and older.

Table 6-5. Number of Low Birthweight Infants by Demographic Characteristics of Mothers by Ethnicity: Massachusetts 1987-1990

	CHINESE	SOUTHEAST ASIAN			WHITE NON-HISPANIC
		Cambodian	Vietnamese	Laotian	
Low birthweight infants	154	201	121	43	14 158
Age, in years					
<20	1	33	16	8	1 200
20-24	15	82	31	19	2 820
25-29	56	34	35	14	4 381
30-34	52	27	24	1	3 829
35-39	28	16	8	1	1 634
40+	2	9	7	0	282
Education, grade					
<9	15	122	49	20	375
9-11	26	32	22	6	1 992
12	21	10	6	10	2 487
13+	77	10	15	3	6 632
Marital status					
married	151	94	64	31	10 573
not married	3	107	57	12	3 585

Table 6-6. Percent Distribution of Low Birthweight Infants by Medical and Biological Characteristics of Mother by Ethnicity: Massachusetts 1987-1990

	CHINESE	SOUTHEAST ASIAN			WHITE NON-HISPANIC
		Cambodian	Vietnamese	Laotian	
Low birthweight infants	4.2%	8.1%	6.8%	7.8%	5.0%
Gravidity					
1	4.2%	9.3%	8.2%	12.0%	5.2%
2-3	4.4	7.7	4.6	3.8	4.5
4+	3.6	7.0	9.0	6.9	5.9
Smoking					
no	4.1%	8.0%	6.6%	7.7%	4.2%
yes	9.0	13.3	15.6	-	8.0
Maternal conditions present	9.1%	14.7%	12.1%	16.4%	10.6%
hepatitis B carrier	4.0	9.1	5.7	-	10.1
diabetes	- ¹	-	-	-	5.6
anemia	14.1	-	-	27.8	11.6
Caesarean section	7.8%	18.8%	10.8%	20.0%	8.3%

¹ Calculations based on fewer than five events are excluded.

Table 6-7. Number of Low Birthweight Infants by Medical and Biological Characteristics of Mother by Ethnicity: Massachusetts 1987-1990

	CHINESE	SOUTHEAST ASIAN			WHITE NON-HISPANIC
		Cambodian	Vietnamese	Laotian	
Low birthweight infants	154	201	121	43	14 158
Gravidity					
1	72	79	59	25	5 488
2-3	72	69	33	8	6 295
4+	10	49	28	8	2 168
Smoking					
no	148	193	114	41	9 497
yes	6	8	7	2	4 661
Maternal conditions present	80	89	53	22	7 562
hepatitis B carrier	6	11	5	2	17
diabetes	3	0	1	0	202
anemia	10	3	3	5	430
Caesarean section	56	42	27	8	5 577

Table 6-8. Percent Distribution of Low Birthweight Infants by Prenatal Care Characteristics of Mother by Ethnicity: Massachusetts 1987-1990

	CHINESE	SOUTHEAST ASIAN			WHITE NON-HISPANIC
		Cambodian	Vietnamese	Laotian	
Low birthweight infants	4.2%	8.1%	6.8%	7.8%	5.0%
Adequacy of prenatal care	4.0%	8.6%	6.7%	6.7%	4.5%
Payment source					
private	4.1%	8.7%	6.8%	9.1%	4.4%
public	4.1	7.4	6.5	6.8	7.0
self	7.8	-	-	-	6.1
Site of Care					
physician's office	4.7%	10.0%	6.4%	7.3%	4.5%
hospital clinic	5.9	7.4	7.6	10.2	9.1
HMO/other	2.8	6.5	6.7	-	4.9
community health center	3.6	7.1	5.9	-	9.3

¹ Calculations based on fewer than five events are excluded.

Table 6-9. Number of Low Birthweight Infants by Prenatal Care Characteristics of Mother by Ethnicity: Massachusetts 1987-1990

	CHINESE	SOUTHEAST ASIAN			WHITE NON-HISPANIC
		Cambodian	Vietnamese	Laotian	
Low birthweight infants	154	201	121	43	14 158
Adequacy of prenatal care	115	79	69	16	10 317
Payment source					
private	110	58	46	25	9 919
public	30	127	68	17	3 104
self	11	3	1	0	347
Site of Care					
physician's office	79	64	40	22	9 887
hospital clinic	22	91	43	16	1 759
HMO/other	15	11	12	4	1 459
community health center	37	29	23	1	532

Table 6-10. Percent Distribution of Low Birthweight Infants by Health Risk Characteristics of Mothers by Ethnicity: Massachusetts 1987-1990

	CHINESE	SOUTHEAST ASIAN			WHITE NON-HISPANIC
		Cambodian	Vietnamese	Laotian	
Low birthweight infants	4.2%	8.1%	6.8%	7.8%	5.0%
Congenital anomalies	7.1%	21.4%	11.4%	- ¹	13.2%
Abnormal conditions	13.7%	43.7%	16.4%	40.0%	18.8%
jaundice	11.9%	37.9%	14.0%	-	20.8%
Sex of infant: female	4.4%	9.6%	7.8%	8.6%	5.4%
Early gestational age	35.4%	24.2%	29.2%	26.8%	46.1%

¹ Calculations based on fewer than five events are excluded.

Table 6-11. Number of Low Birthweight Infants by Health Risk Characteristics of Mothers by Ethnicity: Massachusetts 1987-1990

	CHINESE	SOUTHEAST ASIAN			WHITE NON-HISPANIC
		Cambodian	Vietnamese	Laotian	
Low birthweight infants	154	201	121	43	14 158
Congenital anomalies	8	9	5	2	1 129
Abnormal conditions	46	45	22	8	4 893
jaundice	22	11	8	4	2 092
Sex of infant: female	77	116	69	23	7 372
Early gestational age	62	74	42	22	7 109

APPENDIX II

COMMUNITY TABLES



APPENDIX II: Community Tables

BOSTON:

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CHELSEA:

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LOWELL:

Table	5a.	Sociodemographic Characteristics of Mothers by Ethnicity
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LYNN:

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MALDEN:

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QUINCY:

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REVERE:

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SOUTH COVE CATCHMENT AREA:

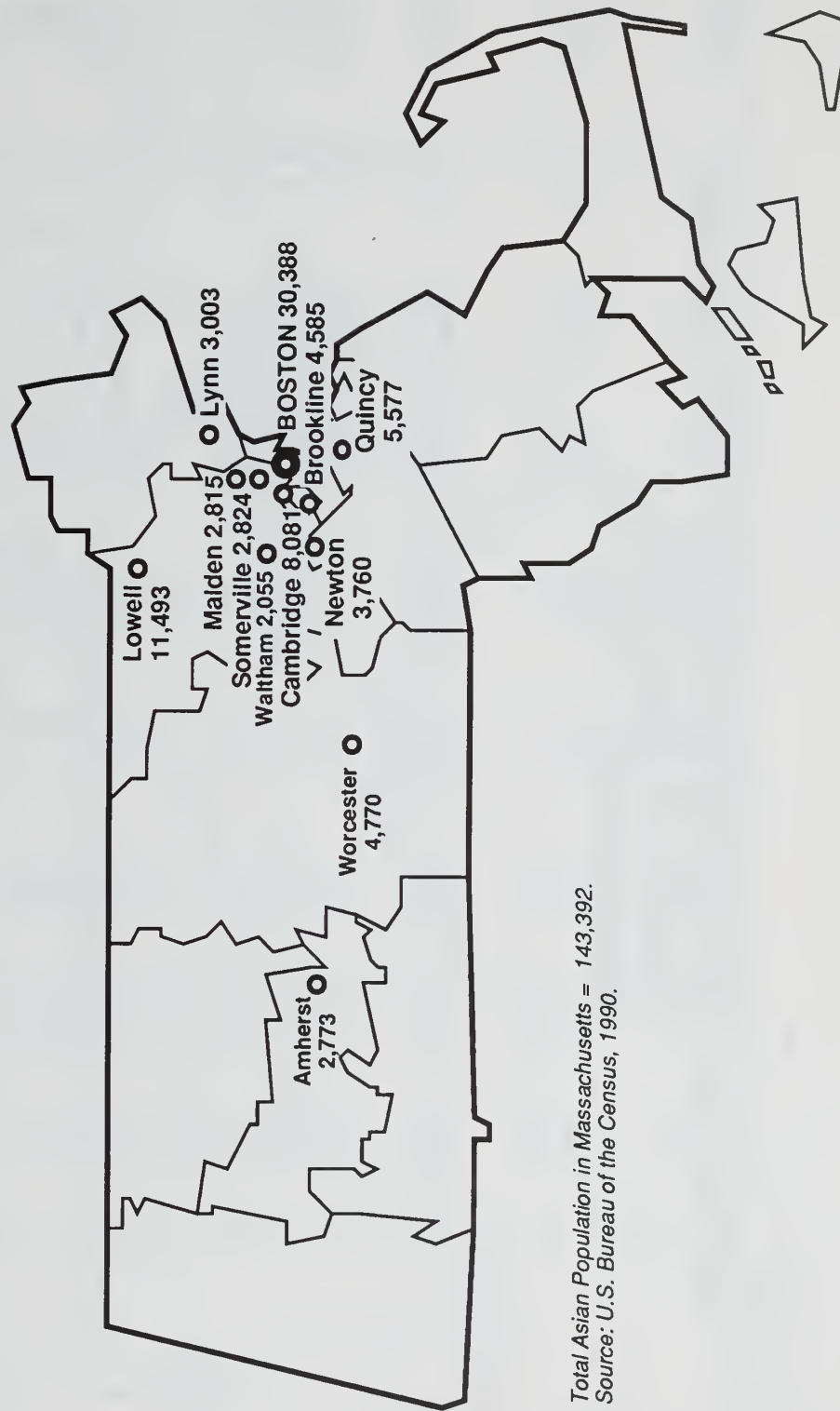
Table	15a.	Sociodemographic Characteristics by Ethnicity
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WORCESTER:

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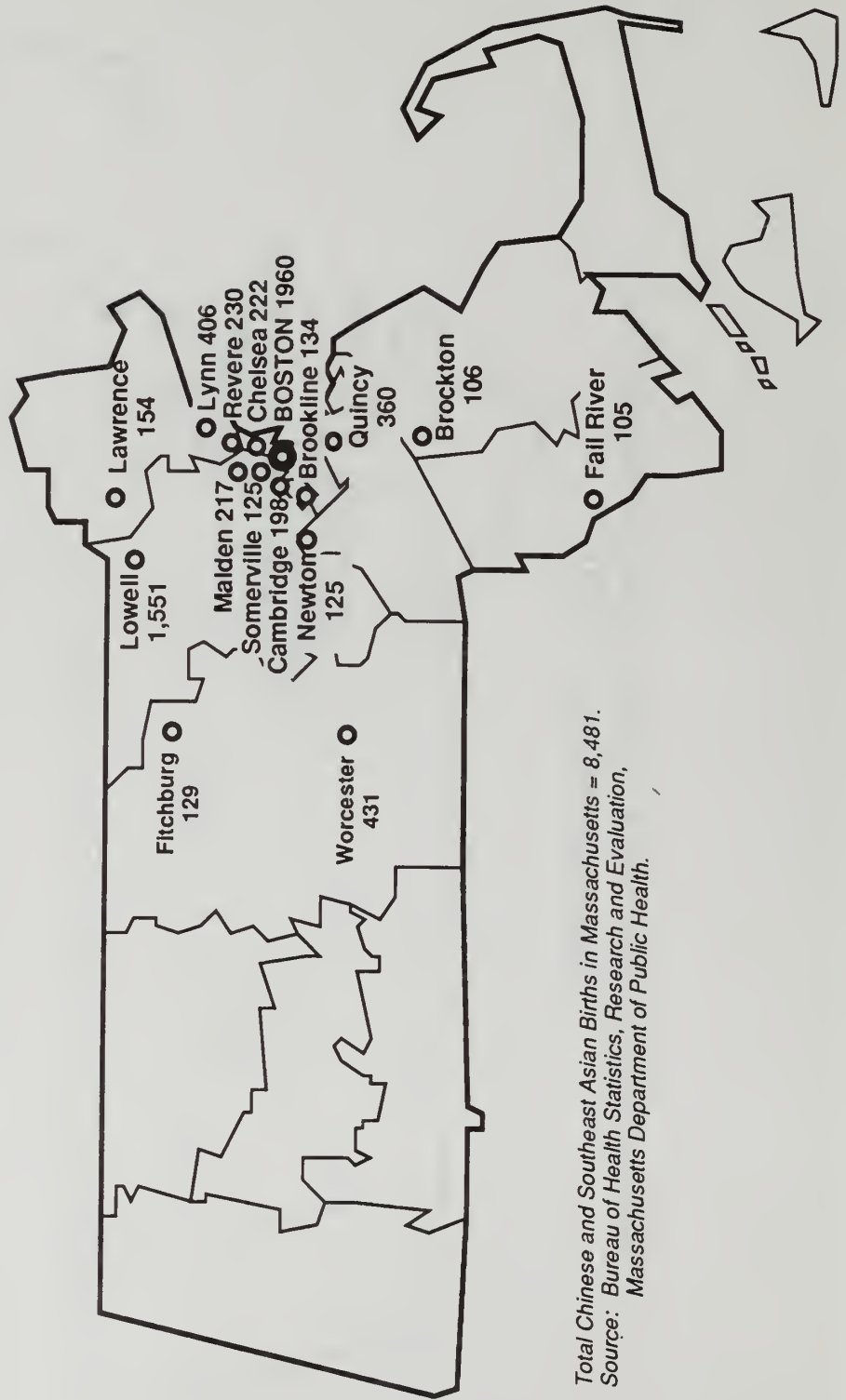


Communities with the Largest Asian Populations Massachusetts: 1990



Total Asian Population in Massachusetts = 143,392.
Source: U.S. Bureau of the Census, 1990.

Communities with the Highest Number of Chinese and Southeast Asian Births Massachusetts: 1987 - 90



Total Chinese and Southeast Asian Births in Massachusetts = 8,481.
Source: Bureau of Health Statistics, Research and Evaluation,
Massachusetts Department of Public Health.

Table 1a. Sociodemographic Characteristics of Mothers by Ethnicity: Boston 1987-1990

	CHINESE			SOUTHEAST ASIAN			WHITE NON-HISPANIC		
	Cambodian		Number	Vietnamese		Number	Laotian		Number
	Percent ¹	Percent		Percent	Percent		Percent	Percent	
Births	100.0	100.0	1 135	100.0	100.0	621	100.0	100.0	15 468
SOCIODEMOGRAPHIC									
Age, in years									
<20	1.0	11.0	11	11.6	11.6	72	35.1 ²	5.6	868
20-24	11.7	30.6	133	25.6	25.6	159	35.1	17.4	2 698
25-29	39.6	27.8	450	24.8	24.8	154	40.5	33.4	5 172
30-34	33.8	13.3	384	22.2	22.2	138	-	29.9	4 628
35-39	12.6	11.6	143	13.0	13.0	81	-	11.3	1 753
40 +	1.2	5.8	13	2.7	2.7	17	-	2.2	342
Education, grade ³									
<9	23.0	59.5	261	43.2	43.2	268	54.0	2.8	435
9-11	24.8	16.2	282	21.4	21.4	133	18.9	11.0	1 695
12	23.8	9.8	136	19.8	19.8	55	-	33.0	2 289
13 +	26.8	5.8	304	14.2	14.2	88	-	55.9	8 651
Marital status									
married	95.2	53.8	1 081	49.1	49.1	305	59.5	78.2	12 099
not married	4.8	46.2	54	50.9	50.9	316	40.5	21.8	3 369
MATERNAL/BIOLOGICAL									
Gravidity									
1	58.3	32.2	652	24.3	24.3	150	41.2	74.5	11 386
2-3	40.0	67.2	447	74.9	74.9	462	58.8	24.6	3 762
4 +	1.7	-	19	.2	.2	5	-	.9	135
Smoking									
no	98.7	94.8	1 120	97.9	97.9	608	100	79.0	12 228
yes	1.3	5.2	15	2.1	2.1	13	-	21.0	3 242

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

³ Women 20 years of age and older.

Table 1b. Perinatal Characteristics by Ethnicity: Boston 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number	Cambodian		Vietnamese		Laotian	Percent	Number	Percent	Number
			Percent	Number	Percent	Number					
Births	100.0	1 135	100.0	173	100.0	621	100.0	100.0	37	100.0	15 468
MATERNAL/BIOLOGICAL											
Maternal conditions present	24.0	272	22.0	38	24.6	153	16.2	30.5	6	30.5	4 707
hepatitis B carrier	5.8	66	4.6	8	4.8	30	- ²	0.1	1	0.1	14
diabetes	1.5	17	-	1	1.6	10	-	1.2	0	1.2	194
anemia	1.6	18	3.5	6	2.2	14	-	2.8	2	2.8	432
Caesarean section	18.1	203	8.1	14	12.9	80	-	23.9	2	23.9	3 609
ACCESS TO CARE											
Adequacy of prenatal care	75.9	861	41.0	71	48.8	303	35.1	80.0	13	80.0	12 376
Payment source											
private	58.3	652	32.2	55	24.3	150	41.2	74.5	14	74.5	11 386
public	35.7	399	66.7	114	73.7	455	58.8	22.4	20	22.4	3 423
self	4.3	48	-	1	1.1	7	-	2.2	0	2.2	339
Site of care											
physician's office	27.1	306	12.9	22	15.4	95	16.7	53.8	6	53.8	8 261
hospital clinic	9.4	106	44.4	76	37.9	234	41.7	16.4	15	16.4	2 526
HMO/other	9.6	108	8.8	15	8.1	50	-	14.8	1	14.8	2 276
community health center	53.9	608	1.2	58	38.6	238	38.9	14.9	14	14.9	2 293
INFANT RISK FACTORS											
Congenital anomalies	3.6	41	2.9	5	1.8	11	-	5.5	1	5.5	849
Abnormal conditions	8.1	92	2.9	5	7.7	48	-	15.3	2	15.3	2 354
jaundice	3.9	44	-	1	3.9	24	-	6.2	0	6.2	957
Sex of infant: female	47.4	538	44.5	77	47.7	296	48.6	49.0	18	49.0	7 573
Early gestational age	4.3	47	9.3	15	8.1	49	-	6.0	4	6.0	903

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

Table 2a. Low Birthweight and Sociodemographic Characteristics of Mothers by Ethnicity: Boston 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
			Number	Cambodian		Vietnamese		Laotian			
	Percent ¹			Percent	Number	Percent	Number	Percent	Number	Percent	Number
Low birthweight infants	3.5	40		7.5	13	6.6	41	.2	0	5.6	866
SOCIODEMOGRAPHIC											
Age, in years											
<20	-	0		-	3	11.1	8	-	0	8.0	69
20-24	5.3	7		-	3	7.0	11	-	0	5.7	154
25-29	3.8	17		-	1	7.1	11	-	0	5.1	265
30-34	2.6	10		-	1	4.4	6	-	0	5.3	244
35-39	4.2	6		-	3	-	2	-	0	6.2	109
40+	-	0		-	2	-	3	-	0	7.3	25
Education, grade ³											
<9	3.9	10		11.6	12	6.7	18	-	0	11.1	48
9-11	7.5	7		-	1	6.8	9	-	0	8.1	136
12	5.2	7		-	0	-	3	-	0	6.8	155
13+	2.0	6		-	0	5.8	5	-	0	4.2	362
Marital status											
married	3.5	38		8.6	8	5.9	18	-	0	4.6	555
not married	-	2		6.2	5	7.3	23	-	0	9.3	311
MATERNAL/BIOLOGICAL											
Gravidity											
1	2.7	14		-	2	9.1	21	-	0	5.4	348
2-3	4.3	22		8.1	5	3.5	9	-	0	5.2	359
4+	-	4		-	4	8.5	11	-	0	7.8	152
Smoking											
no	3.5	39		6.7	11	6.4	39	-	0	4.8	581
yes	-	1		-	2	-	2	-	0	8.8	285

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

³ Women 20 years of age and older.

Table 2b. Low Birthweight and Perinatal Characteristics by Ethnicity: Boston 1987-1990

	CHINESE			SOUTHEAST ASIAN			WHITE NON-HISPANIC		
	Percent ¹	Number	Percent	Cambodian	Vietnamese	Laotian	Percent	Number	Percent
Low birthweight infants	3.5	40	7.5	13	6.6	41	5.6	866	5.6
MATERNAL/BIOLOGICAL									
Maternal conditions present	8.5	23	15.8	6	15.1	23	11.3	529	11.3
hepatitis B carrier	-	3	-	0	-	3	-	2	-
diabetes	-	2	-	0	-	1	5.2	10	5.2
anemia	-	3	-	0	-	0	9.3	40	9.3
Caesarean section	5.9	12	-	1	10.0	8	9.7	348	9.7
ACCESS TO CARE									
Adequacy of prenatal care	3.8	33	-	3	6.6	20	4.9	603	4.9
Payment source									
private	2.9	19	9.1	5	8.0	12	4.7	537	4.7
public	4.3	17	7.0	8	6.0	27	8.0	272	8.0
self	-	2	-	0	-	0	6.5	22	6.5
Site of Care									
physician's office	3.6	11	-	2	7.4	7	4.7	396	4.7
hospital clinic	5.7	6	7.9	6	6.8	16	8.3	209	8.3
HMO/other	-	0	-	0	-	3	4.8	109	4.8
community health center	3.7	22	8.6	5	5.9	14	6.3	144	6.3
INFANT RISK FACTORS									
Congenital anomalies	-	3	-	0	-	3	8.4	70	8.4
Abnormal conditions	12.0	11	-	1	21.3	10	13.9	327	13.9
jaundice	-	3	-	0	29.2	7	17.2	165	17.2
Sex of infant: female	3.7	20	9.1	7	8.8	26	6.2	470	6.2
Early gestational age	30.4	14	-	3	27.7	18	46.8	422	46.8

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

Table 3a. Sociodemographic Characteristics of Mothers by Ethnicity: Chelsea 1987-1990

	CHINESE			SOUTHEAST ASIAN			WHITE NON-HISPANIC		
	Percent ¹	Number	Percent	Cambodian	Vietnamese	Laotian	Percent	Number	
Births	100.0	23	100.0	128	100.0	71	100.0	1 072	
SOCIODEMOGRAPHIC									
Age, in years									
<20	-	1	15.6	20	12.7	9	8.1	87	
20-24	-	4	29.7	38	33.8	24	26.8	287	
25-29	-	4	26.6	34	21.1	15	34.0	364	
30-34	30.4	7	12.5	16	16.9	12	23.0	246	
35-39	30.4	7	13.3	17	9.9	7	7.3	78	
40 +	-	0	-	3	-	4	0.9	10	
Education, grade ³									
<9	26.1	6	67.2	86	49.3	35	3.8	41	
9-11	30.4	7	14.8	19	19.7	14	18.1	194	
12	-	2	9.0	6	-	5	41.3	221	
13 +	-	4	-	2	-	2	35.2	377	
Marital status									
married	82.6	19	53.9	69	50.7	36	66.7	715	
not married	17.4	4	46.1	59	49.3	35	33.3	357	
MATERNAL/BIOLOGICAL									
Gravidity									
1	40.9	9	43.1	53	42.0	29	38.1	402	
2-3	40.9	9	27.6	34	42.0	29	45.7	483	
4 +	-	4	29.3	36	15.9	11	16.2	171	
Smoking									
no	95.6	22	100.0	128	95.8	68	63.9	685	
yes	-	1	-	0	-	3	36.1	387	

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.³ Women 20 years of age and older.

Table 3b.

Perinatal Characteristics by Ethnicity: Chelsea 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number	Percent	Cambodian		Vietnamese		Laotian		Percent	Number
				Percent	Number	Percent	Number	Percent	Number		
Births	100.0	23	100.0	128	100.0	71	1072	0	100.0	1072	1072
MATERNAL/BIOLOGICAL											
Maternal conditions present	21.7	5	14.8	19	18.3	13	294	0	27.4	294	294
hepatitis B carrier	-	2	4.7	6	-	2	0	0	-	0	0
diabetes	-	0	-	1	-	1	20	0	1.9	20	20
anemia	-	0	-	2	-	0	11	0	1.0	11	11
Caesarean section	-	2	7.8	10	15.5	11	262	0	24.7	262	262
ACCESS TO CARE											
Adequacy of prenatal care	56.5	13	42.2	54	43.7	31	819	0	76.4	819	819
Payment source											
private	40.9	9	22.8	29	11.8	8	647	0	61.4	647	647
public	59.1	13	74.8	95	86.8	59	382	0	36.2	382	382
self	-	0	-	0	-	0	16	0	1.5	16	16
Site of care											
physician's office	-	3	15.1	19	29.0	20	674	0	63.5	674	674
hospital clinic	-	3	27.8	35	17.4	12	148	0	13.9	148	148
HMO/other	-	1	5.0	5	-	3	98	0	9.2	98	98
community health center	69.6	16	53.2	67	49.3	34	142	0	13.4	142	142
INFANT RISK FACTORS											
Congenital anomalies	-	0	-	2	-	1	30	0	2.8	30	30
Abnormal conditions	-	2	-	4	-	4	80	0	7.5	80	80
jaundice	-	0	-	1	-	0	25	0	2.3	25	25
Sex of infant: female	47.8	11	42.2	54	57.8	41	505	0	47.1	505	505
Early gestational age	-	0	6.3	7	-	3	67	0	6.4	67	67

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.

Table 4a. Low Birthweight and Sociodemographic Characteristics of Mothers by Ethnicity: Chelsea 1987-1990

	CHINESE				SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹		Number		Percent		Number		Percent		Number	
Low birthweight infants	- ²		0		3.9	5	11.4	8	-	-	0	75
SOCIODEMOGRAPHIC												
Age, in years												
<20	-		0		-	1	-	1	-		0	6
20-24	-		0		-	2	-	2	-		0	23
25-29	-		0		-	2	-	1	-		0	25
30-34	-		0		-	0	-	2	-		0	16
35-39	-		0		-	0	-	2	-		0	3
40+	-		0		-	0	-	0	-		0	2
Education, grade ³												
<9	-		0		-	2	-	3	-		0	4
9-11	-		0		-	1	-	2	-		0	17
12	-		0		-	2	-	0	-		0	18
13+	-		0		-	0	-	0	-		0	18
Marital status												
married	-		0		-	3	-	3	-		0	39
not married	-		0		-	2	14.7	5	-		0	36
MATERNAL/BIOLOGICAL												
Gravidity												
1	-		0		9.4	5	-	3	-		0	28
2-3	-		0		-	0	-	4	-		0	29
4+	-		0		-	0	-	1	-		0	16
Smoking												
no	-		0		3.9	5	11.9	8	-		0	39
yes	-		0		-	0	-	0	-		0	36

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

³ Women 20 years of age and older.

Table 4b.

Low Birthweight and Perinatal Characteristics by Ethnicity: Chelsea 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Cambodian		Vietnamese		Laotian		Percent	Number		
		Percent	Number	Percent	Number	Percent	Number		Percent	Number	
Low birthweight infants	- ²	0	3.9	5	11.4	8	-	0	7.0	75	
MATERNAL/BIOLOGICAL											
Maternal conditions present	-	0	-	3	-	4	-	0	14.6	43	
hepatitis B carrier	-	0	-	1	-	0	-	0	-	0	
diabetes	-	0	-	0	-	0	-	0	-	0	
anemia	-	0	-	0	-	0	-	0	-	2	
Caesarean section	-	0	-	1	-	3	-	0	11.9	31	
ACCESS TO CARE											
Adequacy of prenatal care	-	0	-	4	-	1	-	0	6.0	49	
Payment source											
private	-	0	-	4	-	1	-	0	5.8	37	
public	-	0	-	4	10.3	6	-	0	8.4	32	
self	-	0	-	1	-	0	-	0	-	2	
Site of Care											
physician's office	-	0	-	1	-	5	-	0	6.6	44	
hospital clinic	-	0	-	1	-	0	-	0	12.2	18	
HMO/other	-	0	-	1	-	0	-	0	-	3	
community health center	-	0	-	2	-	2	-	0	5.6	8	
INFANT RISK FACTORS											
Congenital anomalies	-	0	-	0	-	0	-	0	26.7	8	
Abnormal conditions	-	0	-	1	-	2	-	0	30.0	24	
jaundice	-	0	-	0	-	0	-	0	48.0	12	
Sex of infant: female	-	0	-	3	-	4	-	0	7.2	36	
Early gestational age	-	0	-	1	-	2	-	0	53.0	35	

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.

Table 5a. Sociodemographic Characteristics of Mothers by Ethnicity: Lowell 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC		
	Percent ¹	Number		Percent	Number	Percent	Number	Percent	Number	
Births	100.0	95		100.0	1 193	100.0	78	100.0	185	5 460
SOCIODEMOGRAPHIC										
Age, in years										
<20	- ²	0		19.7	235	6.4	5	23.2	43	639
20-24	-	2		34.7	414	14.1	11	40.0	74	1 642
25-29	44.2	42		19.3	230	32.0	25	24.3	45	1 926
30-34	44.2	42		13.8	165	25.6	20	8.6	16	944
35-39	9.5	9		8.4	100	11.5	9	3.8	7	268
40 +	-	0		4.1	49	10.3	8	-	0	39
Education, grade ³										
<9	-	0		77.8	928	50.0	39	53.5	99	237
9-11	-	4		10.5	125	9.0	7	19.5	36	947
12	17.1	7		6.3	34	22.0	9	21.9	14	1 182
13 +	83.2	79		2.4	39	23.1	18	6.5	12	1 853
Marital status										
married	100.0	95		42.8	511	68.0	53	57.5	110	3 888
not married	-	0		57.2	682	32.0	25	40.5	75	1 572
MATERNAL/BIOLOGICAL										
Gravidity										
1	64.9	61		35.3	420	35.9	28	43.5	80	2 142
2-3	30.9	29		37.3	444	41.0	32	45.6	84	2 531
4 +	-	4		27.4	326	23.1	18	10.9	20	748
Smoking										
no	100.0	95		98.0	1 169	98.7	77	95.7	177	3 538
yes	-	0		2.0	24	-	1	4.3	8	1 922

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.³ Women 20 years of age and older.

Table 5b. Perinatal Characteristics by Ethnicity: Lowell 1987-1990

	CHINESE				SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Cambodian		Vietnamese		Laotian							
	Percent ¹	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Births	100.0	95	100.0	1 193	100.0	78	100.0	185	100.0	5 460		
MATERNAL/BIOLOGICAL												
Maternal conditions present	12.6	12	27.0	322	27.0	21	24.3	45	21.3	1 162		
hepatitis B carrier	- ²	2	5.7	68	-	2	4.9	9	-	3		
diabetes	-	2	0.6	7	-	1	-	1	0.7	39		
anemia	-	0	5.2	62	9.0	7	3.8	7	1.1	58		
Caesarean section	13.7	13	9.1	108	19.2	15	8.1	15	25.0	1 361		
ACCESS TO CARE												
Adequacy of prenatal care	71.6	68	30.2	360	48.7	38	50.3	93	76.2	4 162		
Payment source												
private	64.1	59	28.6	337	41.6	32	48.4	89	70.7	3 749		
public	34.8	32	69.7	820	58.4	45	50.5	93	26.9	1 426		
self	-	-	-	3	-	0	-	2	1.8	93		
Site of care												
physician's office	59.1	55	29.9	353	43.6	34	53.5	99	74.3	3 970		
hospital clinic	26.9	25	62.8	742	48.7	38	40.0	74	16.4	876		
HMO/other	10.8	10	5.5	65	-	4	4.9	9	7.8	419		
community health center	-	3	1.8	21	-	2	-	3	1.5	79		
INFANT RISK FACTORS												
Congenital anomalies	-	2	1.5	18	-	1	-	3	1.3	72		
Abnormal conditions	-	4	2.7	32	-	2	2.7	5	3.2	173		
jaundice	-	3	0.5	6	-	0	-	3	0.9	49		
Sex of infant: female	46.3	44	49.7	593	55.1	43	49.2	91	48.8	2 662		
Early gestational age	-	2	14.3	168	14.3	11	14.8	27	7.2	387		

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

Table 6a. Low Birthweight and Sociodemographic Characteristics of Mothers by Ethnicity: Lowell 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number	Percent	Cambodian	Percent	Vietnamese	Laotian	Percent	Number	Percent	Number
Low birthweight infants	- ²	1		8.6	102	15.4	12	10.8	20	5.8	318
SOCIODEMOGRAPHIC											
Age, in years											
<20	-	0	7.3	17	-	-	0	-	2	7.8	50
20-24	-	0	11.4	47	-	-	4	14.9	11	5.5	90
25-29	-	1	7.4	17	-	-	3	15.6	7	5.8	111
30-34	-	0	6.7	11	-	-	2	-	0	5.2	49
35-39	-	0	6.0	6	-	-	0	-	0	5.6	15
40+	-	0	-	4	-	-	3	-	0	-	3
Education, grade ³											
<9	-	0	7.1	66	20.5	-	8	11.1	11	4.6	11
9-11	-	0	12.8	16	-	-	1	-	5	8.1	77
12	-	0	-	4	-	-	0	-	0	6.2	73
13+	-	1	17.2	5	-	-	3	-	1	4.5	84
Marital status											
married	-	1	7.8	40	15.1	-	8	10.0	11	5.1	199
not married	-	0	9.1	62	-	-	4	12.0	9	7.6	119
MATERNAL/BIOLOGICAL											
Gravidity											
1	-	1	10.0	42	17.9	-	5	13.7	11	5.5	117
2-3	-	0	8.6	38	-	-	4	-	5	5.3	134
4+	-	0	6.4	21	-	-	3	-	3	8.4	63
Smoking											
no	-	1	8.5	99	14.2	-	11	10.2	18	4.3	151
yes	-	0	-	3	-	-	1	-	2	8.7	167

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

³ Women 20 years of age and older.

Table 6b. Low Birthweight and Perinatal Characteristics by Ethnicity: Lowell 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
			Percent ¹	Cambodian		Vietnamese		Laotian			
	Number			Percent	Number	Percent	Number	Percent	Number	Percent	Number
Low birthweight infants	- ²	1		8.6	102	15.4	12	10.8	20	5.8	318
MATERNAL/BIOLOGICAL											
Maternal conditions present	-	0		14.9	48	23.8	5	10.0	10	12.1	141
hepatitis B carrier	-	0		11.8	8	-	0	-	0	-	1
diabetes	-	0		-	0	-	0	-	0	-	3
anemia	-	0		-	3	-	0	-	2	17.2	10
Caesarean section	-	0		19.4	21	33.3	5	-	4	8.0	109
ACCESS TO CARE											
Adequacy of prenatal care	-	1		9.7	35	-	2	6.4	6	5.0	207
Payment source											
private	-	1		9.8	33	-	3	9.0	8	5.1	191
public	-	0		7.4	61	20.0	9	12.9	12	7.0	100
self	-	0		-	2	-	0	-	0	8.6	8
Site of Care											
physician's office	-	1		10.5	37	-	2	7.1	7	5.0	199
hospital clinic	-	0		7.3	54	18.4	7	16.2	12	8.7	76
HMO/other	-	0		-	5	-	1	-	1	6.0	25
community health center	-	0		-	2	-	2	-	0	6.3	5
INFANT RISK FACTORS											
Congenital anomalies	-	0		35.3	6	-	1	-	1	34.7	25
Abnormal conditions	-	0		62.5	20	-	0	-	4	50.6	87
jaundice	-	0		100.0	6	-	0	-	2	67.4	33
Sex of infant: female	-	1		9.8	58	14.0	6	9.9	9	6.2	164
Early gestational age	-	0		23.2	39	45.4	5	25.9	7	42.1	163

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

Table 7a. Sociodemographic Characteristics of Mothers by Ethnicity: Lynn 1987-1990

	CHINESE			SOUTHEAST ASIAN			WHITE NON-HISPANIC		
	Cambodian		Number	Vietnamese		Number	Laotian		Number
	Percent ¹	Percent		Percent	Percent		Percent	Percent	
Births	100.0	100.0	318	100.0	100.0	34	100.0	100.0	4 333
SOCIODEMOGRAPHIC									
Age, in years									
<20	. ²	14.8	47	-	29.0	2	11	10.4	449
20-24	-	28.0	89	23.5	26.3	8	10	25.8	1 116
25-29	37.5	22.3	71	29.4	34.2	10	13	35.6	1 543
30-34	31.3	21.7	69	26.5	-	9	3	22.0	953
35-39	-	9.4	30	-	-	4	1	5.7	246
40+	-	3.8	12	-	-	1	0	0.6	26
Education, grade ³									
<9	-	60.7	193	52.9	39.5	18	15	2.6	115
9-11	-	15.7	50	-	18.4	3	7	14.5	629
12	-	8.3	11	-	31.3	2	5	40.9	902
13+	50.0	3.5	11	20.6	-	7	2	38.5	1 669
Marital status									
married	68.8	49.4	157	67.6	55.3	23	21	70.9	3 072
not married	31.2	50.6	161	32.4	47.7	11	17	29.1	1 261
MATERNAL/BIOLOGICAL									
Gravidity									
1	62.5	27.6	87	35.3	43.2	12	16	37.5	1 613
2-3	18.8	39.0	123	41.2	40.5	14	15	48.0	2 066
4+	18.7	33.3	105	23.5	16.2	8	6	14.5	622
Smoking									
no	81.3	97.8	311	100.0	100.0	34	38	64.3	2 788
yes	-	2.2	7	-	-	0	0	35.7	1 545

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.³ Women 20 years of age and older.

Table 7b. Low Birthweight and Perinatal Characteristics by Ethnicity: Lynn 1987-1990

	CHINESE			SOUTHEAST ASIAN						WHITE NON-HISPANIC		
	Percent ¹	Number		Cambodian		Vietnamese		Laotian		Percent	Number	
				Percent	Number	Percent	Number	Percent	Number			
Births	100.0	16		100.0	318	100.0	34	100.0	38	100.0	4 333	
MATERNAL/BIOLOGICAL												
Maternal conditions present	- ²	2		15.7	50	-	4	13.2	5	21.5	933	
hepatitis B carrier	-	0		-	4	-	0	-	0	-	2	
diabetes	-	1		-	2	-	0	-	0	0.8	34	
anemia	-	1		1.9	6	-	0	-	0	0.6	26	
Caesarean section	-	3		10.1	32	-	3	-	2	24.4	1 055	
ACCESS TO CARE												
Adequacy of prenatal care	68.8	11		50.3	160	64.7	22	63.2	24	81.1	3 513	
Payment source												
private	68.8	11		14.6	46	35.3	12	43.2	16	67.9	2 909	
public	-	4		81.8	257	61.8	21	51.4	19	28.8	1 232	
self	-	1		1.3	4	-	1	-	0	1.6	68	
Site of Care												
physician's office	68.8	11		9.8	31	39.4	13	35.1	13	73.7	3 165	
hospital clinic	-	1		68.6	216	51.5	17	51.4	19	15.8	678	
HMO/other	-	2		5.7	18	-	0	-	0	6.6	283	
community health center	-	2		15.9	50	-	3	13.5	5	3.9	166	
INFANT RISK FACTORS												
Congenital anomalies	-	0		-	3	-	2	-	0	1.8	76	
Abnormal conditions	-	1		4.4	14	-	2	-	1	4.8	206	
jaundice	-	0		1.6	5	-	0	-	1	1.1	48	
Sex of infant: female	37.5	6		45.3	144	44.1	15	44.7	17	49.7	2 152	
Early gestational age	-	1		10.5	32	-	2	21.0	278	6.6	278	

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

Table 8a. Low Birthweight and Sociodemographic Characteristics of Mothers by Ethnicity: Lynn 1987-1990

	CHINESE			SOUTHEAST ASIAN			WHITE NON-HISPANIC		
	Percent ¹	Number	Cambodian	Percent	Number	Vietnamese	Percent	Number	Number
Low birthweight infants	.2	0	7.9	25	0	-	-	2	254
SOCIODEMOGRAPHIC									
Age, in years									
<20	-	0	13.0	6	0	-	-	1	28
20-24	-	0	5.6	5	0	-	-	1	60
25-29	-	0	-	2	0	-	-	0	71
30-34	-	0	10.1	7	0	-	-	0	67
35-39	-	0	-	3	0	-	-	0	23
40+	-	0	-	2	0	-	-	0	5
Education, grade ³									
<9	-	0	7.3	14	0	-	-	1	9
9-11	-	0	-	3	0	-	-	0	49
12	-	0	-	0	0	-	-	0	64
13+	-	0	-	2	0	-	-	0	84
Marital status									
married	-	0	8.9	14	0	-	-	1	147
not married	-	0	6.9	11	0	-	-	1	107
MATERNAL/BIOLOGICAL									
Gravidity									
1	-	0	10.5	9	0	-	-	2	84
2-3	-	0	4.9	6	0	-	-	0	122
4+	-	0	9.5	10	0	-	-	0	48
Smoking									
no	-	0	7.4	23	0	-	-	2	129
yes	-	0	-	2	0	-	-	0	125

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.³ Women 20 years of age and older.

Table 8b.

Low Birthweight and Perinatal Characteristics by Ethnicity: Lynn 1987-1990

	CHINESE			SOUTHEAST ASIAN						WHITE NON-HISPANIC		
	Percent ¹	Number		Cambodian		Vietnamese		Laotian		Percent	Number	
Low birthweight infants	- ²	0		7.9	25	-	0	-	2	5.9	259	
MATERNAL/BIOLOGICAL												
Maternal conditions present	-	0		20.4	10	-	0	-	1	15.9	148	
hepatitis B carrier	-	0		-	0	-	0	-	0	-	0	
diabetes	-	0		-	0	-	0	-	0	-	3	
anemia	-	0		-	0	-	0	-	0	38.5	10	
Caesarean section	-	0		21.9	7	-	0	-	0	9.6	101	
ACCESS TO CARE												
Adequacy of prenatal care	-	0		8.8	14	-	0	-	1	5.2	181	
Payment source												
private	-	0		-	2	-	0	-	1	4.8	141	
public	-	0		8.6	22	-	0	-	1	7.6	94	
self	-	0		-	0	-	0	-	0	7.4	5	
Site of Care												
physician's office	-	0		-	2	-	0	-	1	5.0	158	
hospital clinic	-	0		7.4	16	-	0	-	1	8.3	56	
HMO/other	-	0		-	0	-	0	-	0	6.4	18	
community health center	-	0		14.0	7	-	0	-	0	12.1	20	
INFANT RISK FACTORS												
Congenital anomalies	-	0		-	0	-	0	-	0	29.7	22	
Abnormal conditions	-	0		46.2	6	-	0	-	1	33.2	68	
jaundice	-	0		-	3	-	0	-	1	60.4	29	
Sex of infant: female	-	0		9.1	13	-	0	-	2	6.1	132	
Early gestational age	-	0		29.0	9	-	0	-	0	43.5	121	

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.

Table 9a. Sociodemographic Characteristics of Mothers by Ethnicity: Malden 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number		Percent	Number	Percent	Number	Percent	Number	Percent	Number
Births	100.0	140		100.0	17	100.0	56	100.0	4	100.0	2 668
SOCIODEMOGRAPHIC											
Age, in years											
<20	-	2		-	2	10.7	6	-	0	4.9	130
20-24	12.1	17		41.2	7	26.8	15	-	1	20.2	539
25-29	46.4	65		41.2	7	26.8	15	-	2	38.8	1 035
30-34	29.3	41		-	1	25.0	14	-	1	28.0	748
35-39	10.7	15		-	0	10.7	6	-	0	7.4	196
40+	-	0		-	0	-	0	-	0	0.8	20
Education, grade ³											
<9	18.6	26		35.3	6	19.6	11	-	1	0.9	23
9-11	30.7	43		-	3	21.4	12	-	1	9.3	249
12	26.7	16		-	2	28.6	6	-	1	43.0	583
13+	29.3	41		-	2	16.1	9	-	1	47.1	1 257
Marital status											
married	96.4	135		64.7	11	67.9	38	-	3	83.1	2 218
not married	3.6	5		35.3	6	32.1	18	-	1	16.9	450
MATERNAL/BIOLOGICAL											
Gravidity											
1	45.6	63		41.2	7	50.9	28	-	0	40.4	1 070
2-3	46.4	64		52.9	9	32.7	18	-	3	48.4	1 284
4+	8.0	11		-	1	16.4	9	-	1	11.2	298
Smoking											
no	97.9	137		100.0	17	98.2	55	-	4	74.1	1 976
yes	-	3		-	0	-	1	-	0	25.9	692

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

³ Women 20 years of age and older.

Table 9b.

Perinatal Characteristics by Ethnicity: Malden 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Cambodian		Number	Vietnamese		Number	Percent	Laotian		Number	Percent
	Percent ¹	Percent		Percent	Percent			Percent	Percent		
Births	100.0	100.0	140	100.0	100.0	17	56	- ²	100.0	2 668	
MATERNAL/BIOLOGICAL											
Maternal conditions present	22.9	29.4	32		28.6	5	16	-	26.1	695	
hepatitis B carrier	3.6	-	5		-	1	2	-	-	3	
diabetes	5.0	-	7		-	1	3	-	2.1	55	
anemia	-	-	0		-	0	1	-	1.2	33	
Caesarean section	20.1	-	28		17.9	2	10	-	27.6	734	
ACCESS TO CARE											
Adequacy of prenatal care	73.6	76.5	103		58.9	13	33	-	82.8	2 210	
Payment source											
private	63.2	64.7	86		52.7	11	29	-	80.5	2 125	
public	32.4	35.3	44		45.4	6	25	-	16.4	432	
self	3.7	-	5		-	0	1	-	2.0	54	
Site of care											
physician's office	26.8	52.9	37		45.4	9	25	-	74.4	1 975	
hospital clinic	13.8	29.4	19		21.8	5	12	-	10.7	284	
HMO/other	9.4	-	13		14.6	1	8	-	11.6	309	
community health center	50.0	-	69		18.2	2	10	-	3.3	88	
INFANT RISK FACTORS											
Congenital anomalies	-	-	3		-	0	2	-	2.3	62	
Abnormal conditions	-	-	4		-	1	0	-	5.7	152	
jaundice	-	-	1		-	0	0	-	1.8	49	
Sex of infant: female	49.3	35.3	69		51.8	6	29	-	51.0	1 360	
Early gestational age	4.5	-	6		11.3	1	6	-	5.1	133	

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.

Table 10a. Low Birthweight and Sociodemographic Characteristics of Mothers by Ethnicity: Malden 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number	Percent	Cambodian	Vietnamese	Laotian		Percent	Number	Percent	Number
Low birthweight infants	6.4	9	- ²	3	-	4	1	5.4	144		
SOCIODEMOGRAPHIC											
Age, in years											
<20	-	0	-	0	-	1	0	4.6	6		
20-24	-	1	-	2	-	0	0	5.4	29		
25-29	9.2	6	-	0	-	3	0	5.6	58		
30-34	-	1	-	1	-	0	1	5.1	38		
35-39	-	1	-	0	-	0	0	5.1	10		
40+	-	0	-	0	-	0	0	-	3		
Education, grade ³											
<9	-	1	-	0	-	1	1	-	1		
9-11	-	3	-	0	-	1	0	7.6	19		
12	-	1	-	1	-	0	0	6.2	36		
13+	-	3	-	1	-	0	0	4.7	59		
Marital status											
married	6.7	9	-	2	-	3	1	4.9	109		
not married	-	0	-	1	-	1	0	7.8	35		
MATERNAL/BIOLOGICAL											
Gravidity											
1	-	4	-	1	-	2	0	5.4	58		
2-3	-	3	-	2	-	1	0	5.0	64		
4+	-	2	-	0	-	1	1	7.4	22		
Smoking											
no	6.6	9	-	3	-	4	1	4.8	94		
yes	-	0	-	0	-	0	0	7.2	50		

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.³ Women 20 years of age and older.

Table 10b. Low Birthweight and Perinatal Characteristics by Ethnicity: Malden 1987-1990

	CHINESE			SOUTHEAST ASIAN			WHITE NON-HISPANIC		
	Percent ¹	Number	Percent	Cambodian	Vietnamese	Laotian	Percent	Number	Percent
Low birthweight infants	6.4	9	.2	3	-	4	-	1	5.4
MATERNAL/BIOLOGICAL									
Maternal conditions present	-	4	-	2	-	0	-	1	11.7
hepatitis B carrier	-	0	-	0	-	0	-	0	-
diabetes	-	0	-	0	-	0	-	0	-
anemia	-	0	-	0	-	0	-	0	15.6
Caesarean section	-	4	-	0	-	0	-	0	7.8
ACCESS TO CARE									
Adequacy of prenatal care	8.7	9	-	2	-	2	-	1	5.0
Payment source									
private	7.0	6	-	3	-	2	-	1	4.7
public	-	2	-	0	-	2	-	0	9.1
self	-	1	-	0	-	0	-	0	-
Site of Care									
physician's office	-	4	-	2	-	3	-	1	4.9
hospital clinic	-	0	-	1	-	0	-	0	10.2
HMO/other	-	2	-	0	-	0	-	0	3.6
community health center	-	3	-	0	-	1	-	0	8.1
INFANT RISK FACTORS									
Congenital anomalies	-	0	-	0	-	0	-	0	21.7
Abnormal conditions	-	1	-	1	-	0	-	0	25.8
jaundice	-	0	-	0	-	0	-	0	28.6
Sex of infant: female	10.1	7	-	1	-	1	-	1	5.8
Early gestational age	-	3	-	1	-	0	-	0	48.5

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

Table 11a. Sociodemographic Characteristics of Mothers by Ethnicity: Quincy 1987-1990

	CHINESE		SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number	Cambodian		Vietnamese		Laotian			
Births	100.0	290	100.0	15	100.0	54	- ²	1	100.0	3 982
SOCIODEMOGRAPHIC										
Age,in years										
<20	1.4	4	-	0	13.0	7	-	0	4.2	166
20-24	16.6	48	40.0	6	24.1	13	-	0	18.7	744
25-29	36.9	107	40.0	6	29.6	16	-	1	38.8	1 544
30-34	33.4	97	-	3	24.1	13	-	0	27.4	1 093
35-39	11.4	33	-	0	9.3	5	-	0	9.3	372
40 +	-	1	-	0	-	0	-	0	1.6	62
Education, grade ³										
<9	17.2	50	53.3	8	18.5	10	-	0	0.8	33
9-11	21.0	61	-	2	18.5	10	-	0	7.0	280
12	35.2	44	-	1	-	4	-	0	35.7	686
13 +	29.3	85	-	3	25.9	14	-	0	56.1	2 234
Marital status										
married	97.2	282	100.0	15	75.9	41	-	0	84.3	3 356
not married	2.8	8	-	0	24.1	13	-	1	15.7	626
MATERNAL/BIOLOGICAL										
Gravidity										
1	50.5	146	40.0	6	46.3	25	-	0	42.3	1 664
2-3	41.2	119	53.3	8	44.4	24	-	1	45.8	1 800
4 +	8.3	24	-	1	9.3	5	-	0	11.9	466
Smoking										
no	98.3	285	100.0	15	98.2	53	-	1	76.1	3 031
yes	1.7	5	-	0	-	1	-	0	23.9	951

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

³ Women 20 years of age and older.

Table 11b.

Perinatal Characteristics by Ethnicity: Quincy 1987-1990

	CHINESE				SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Cambodian		Vietnamese		Laotian							
	Percent ¹	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Births	100.0	290	100.0	15	100.0	54	- ²	1	100.0	3 982		
MATERNAL/BIOLOGICAL												
Maternal conditions present	22.1	64	33.3	5	11.1	6	-	0	28.5	1 134		
hepatitis B carrier	4.1	12	-	1	-	1	-	0	.1	5		
diabetes	1.7	5	-	0	-	0	-	0	1.5	61		
anemia	1.7	5	-	2	-	2	-	0	2.5	98		
Caesarean section	23.0	66	-	0	11.8	6	-	1	28.7	1 125		
ACCESS TO CARE												
Adequacy of prenatal care	75.5	219	46.7	7	63.0	34	-	1	76.8	3 060		
Payment source												
private	67.6	194	71.4	10	51.8	28	-	0	86.6	3 230		
public	27.2	78	-	4	46.3	25	-	1	15.9	631		
self	4.9	14	-	0	-	0	-	0	1.4	55		
Site of care												
physician's office	33.6	97	-	4	34.0	18	-	0	60.8	2 410		
hospital clinic	8.3	24	35.7	5	30.2	16	-	1	11.7	462		
HMO/other	13.5	39	-	0	13.2	7	-	0	16.2	640		
community health center	44.6	129	35.7	5	22.6	12	-	0	11.3	449		
INFANT RISK FACTORS												
Congenital anomalies	2.4	7	-	0	-	3	-	0	3.8	153		
Abnormal conditions	4.8	14	-	4	9.3	5	-	0	10.3	408		
jaundice	2.1	6	-	2	-	2	-	0	4.2	167		
Sex of infant: female	46.9	136	-	4	51.8	28	-	1	48.1	1 915		
Early gestational age	2.4	7	-	0	-	3	-	0	3.8	153		

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.

Table 12a. Low Birthweight and Sociodemographic Characteristics of Mothers by Ethnicity: Quincy 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number	Cambodian		Vietnamese		Leotien	Percent	Number	Percent	Number
			Percent	Number	Percent	Number					
Low birthweight infants	4.1	12	- ²	1	-	0	-	-	0	5.2	207
SOCIODEMOGRAPHIC											
Age, in years											
<20	-	0	-	0	-	0	-	-	0	7.3	12
20-24	-	4	-	1	-	0	-	-	0	3.4	25
25-29	-	2	-	0	-	0	-	-	0	5.0	77
30-34	-	3	-	0	-	0	-	-	0	5.1	56
35-39	-	3	-	0	-	0	-	-	0	7.8	29
40+	-	0	-	0	-	0	-	-	0	12.9	8
Education, grade ³											
<9	-	1	-	0	-	0	-	-	0	-	3
9-11	8.2	5	-	0	-	0	-	-	0	9.3	26
12	-	1	-	0	-	0	-	-	0	4.3	29
13+	-	3	-	0	-	0	-	-	0	4.9	109
Marital status											
married	4.3	12	-	1	-	0	-	-	0	4.8	159
not married	-	0	-	0	-	0	-	-	0	7.7	48
MATERNAL/BIOLOGICAL											
Gravidity											
1	-	4	-	1	-	0	-	-	0	5.1	84
2-3	5.9	7	-	0	-	0	-	-	0	4.7	84
4+	-	1	-	0	-	0	-	-	0	8.0	37
Smoking											
no	4.2	12	-	1	-	0	-	-	0	4.3	131
yes	-	0	-	0	-	0	-	-	0	8.0	76

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

³ Women 20 years of age and older.

Table 12b. Low Birthweight and Perinatal Characteristics by Ethnicity: Quincy 1987-1990

	CHINESE			SOUTHEAST ASIAN			WHITE NON-HISPANIC		
	Percent ¹	Number	Percent	Cambodian	Vietnamese	Laotian	Percent	Number	Percent
Low birthweight infants	4.1	12	-.2	1	0	0	5.2	207	
MATERNAL/BIOLOGICAL									
Maternal conditions present	14.1	9	-	1	0	0	10.1	114	
hepatitis B carrier	-	0	-	0	0	0	-	0	
diabetes	-	0	-	0	0	0	-	3	
anemia	-	0	-	0	0	0	8.2	8	
Caesarean section	9.1	6	-	0	0	0	7.2	81	
ACCESS TO CARE									
Adequacy of prenatal care	3.2	7	-	0	0	0	5.2	158	
Payment source									
private	4.1	8	-	0	0	0	5.0	162	
public	-	4	-	1	0	0	6.5	41	
self	-	0	-	0	0	0	-	1	
Site of Care									
physician's office	6.2	6	-	1	0	0	4.4	107	
hospital clinic	-	0	-	0	0	0	9.6	44	
HMO/other	-	1	-	0	0	0	4.8	31	
community health center	3.9	5	-	0	0	0	5.1	23	
INFANT RISK FACTORS									
Congenital anomalies	-	0	-	0	0	0	11.8	18	
Abnormal conditions	-	3	-	1	0	0	19.1	78	
jaundice	-	2	-	0	0	0	24.0	40	
Sex of infant: female	-	4	-	0	0	0	5.3	101	
Early gestational age	26.1	6	-	0	0	0	47.2	109	

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

Table 13a. Sociodemographic Characteristics of Mothers by Ethnicity: Revere 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC		
			Number	Cambodian		Vietnamese		Laotian		Number
	Percent ¹			Percent	Number	Percent	Number	Percent	Number	
Births	100.0	12	210	100.0	210	- ²	8	-	0	2 135
SOCIODEMOGRAPHIC										
Age, in years										
<20	-	0	30	14.3	30	-	0	-	0	130
20-24	-	1	70	33.3	70	-	4	-	0	506
25-29	58.3	7	50	23.8	50	-	4	-	0	814
30-34	-	4	39	18.6	39	-	0	-	0	511
35-39	-	0	14	6.7	14	-	0	-	0	154
40+	-	0	7	3.3	7	-	0	-	0	20
Education, grade ³										
<9	-	3	138	65.7	138	-	4	-	0	35
9-11	-	1	26	12.4	26	-	0	-	0	254
12	-	1	5	4.7	5	-	0	-	0	507
13+	50.0	6	7	3.3	7	-	1	-	0	816
Marital status										
married	100.0	12	92	43.8	92	-	4	-	0	1 653
not married	-	0	118	56.2	118	-	4	-	0	482
MATERNAL/BIOLOGICAL										
Gravidity										
1	58.3	7	71	35.3	71	62.5	5	-	0	901
2-3	-	4	76	37.8	76	-	2	-	0	942
4+	-	1	54	26.9	54	-	1	-	0	267
Smoking										
no	91.7	11	205	97.6	205	100.0	8	-	0	1 546
yes	-	1	5	2.4	5	-	0	-	0	589

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

³ Women 20 years of age and older.

Table 13b. Perinatal Characteristics by Ethnicity: Revere 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
			Number	Cambodian		Number	Percent	Vietnamese		Number	Percent
	Percent ¹			Percent				Percent			
Births	100.0	12	210	100.0	8	- ²		100.0	0	2 135	100.0
MATERNAL/BIOLOGICAL											
Maternal conditions present	-	3	52	24.8	1	-		-	0	542	25.4
hepatitis B carrier	-	0	5	2.4	0	-		-	0	4	-
diabetes	-	0	1	-	0	-		-	0	40	1.9
anemia	-	2	5	2.4	0	-		-	0	36	1.7
Caesarean section	-	0	15	7.1	1	-		-	0	546	25.8
ACCESS TO CARE											
Adequacy of prenatal care	75.0	9	93	44.3	3	-		-	0	1 657	77.6
Payment source											
private	83.3	10	42	20.5	3	-		-	0	1 524	72.2
public	-	1	154	75.1	5	-		62.5	0	500	23.7
self	-	1	3	-	0	-		-	0	52	2.5
Site of care											
physician's office	-	4	47	22.8	3	-		-	0	1 469	69.1
hospital clinic	-	0	53	25.7	3	-		-	0	263	12.4
HMO/other	-	3	10	4.8	0	-		-	0	176	8.3
community health center	41.7	5	96	46.6	2	-		-	0	219	10.3
INFANT RISK FACTORS											
Congenital anomalies	-	0	1	-	0	-		-	0	52	2.4
Abnormal conditions	-	1	7	3.3	0	-		-	0	137	6.4
jaundice	-	1	2	-	0	-		-	0	43	2.0
Sex of infant: female	41.7	5	111	52.9	6	-		75.0	0	1 013	47.4
Early gestational age	-	0	19	10.2	0	-		-	0	112	5.4

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

Table 14a. Low Birthweight and Sociodemographic Characteristics of Mothers by Ethnicity: Revere 1987-1990

	CHINESE			SOUTHEAST ASIAN			WHITE NON-HISPANIC		
	Percent ¹	Number	Percent	Cambodian	Vietnamese	Laotian	Percent	Number	Number
Low birthweight infants	.2	0	8.1	17	-	1	5.6	0	120
SOCIODEMOGRAPHIC									
Age, in years									
<20	-	0	-	2	-	0	5.4	0	7
20-24	-	0	12.9	9	-	1	5.6	0	28
25-29	-	0	10.0	5	-	0	6.3	0	51
30-34	-	0	-	0	-	0	5.5	0	28
35-39	-	0	-	1	-	0	-	0	5
40+	-	0	-	0	-	0	-	0	1
Education, grade ³									
<9	-	0	5.1	7	-	0	-	0	3
9-11	-	0	19.2	5	-	0	7.5	0	19
12	-	0	-	1	-	0	7.1	0	36
13+	-	0	-	0	-	0	4.3	0	35
Marital status									
married	-	0	7.6	7	-	1	4.9	0	81
not married	-	0	8.5	10	-	0	8.1	0	39
MATERNAL/BIOLOGICAL									
Gravidity									
1	-	0	7.0	5	-	1	5.8	0	52
2-3	-	0	7.9	6	-	0	5.2	0	49
4+	-	0	9.3	5	-	0	6.0	0	16
Smoking									
no	-	0	8.3	17	-	1	4.3	0	66
yes	-	0	-	0	-	0	9.2	0	54

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.³ Women 20 years of age and older.

Table 14b. Low Birthweight and Perinatal Characteristics by Ethnicity: Revere 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number	Percent	Cambodian	Vietnamese	Laotian		Percent	Number	Percent	Number
Low birthweight infants	- ²	0	8.1	17	-	1	-	5.6	120		
MATERNAL/BIOLOGICAL											
Maternal conditions present	-	0	13.5	7	-	1	-	12.4	67		
hepatitis B carrier	-	0	-	1	-	0	-	-	0		
diabetes	-	0	-	0	-	0	-	-	1		
anemia	-	0	-	0	-	0	-	13.9	5		
Caesarean section	-	0	7.7	14	-	1	-	9.3	51		
ACCESS TO CARE											
Adequacy of prenatal care	-	0	12.9	12	-	0	-	5.0	83		
Payment source											
private	-	0	-	4	-	1	-	5.3	80		
public	-	0	5.8	9	-	0	-	5.4	27		
self	-	0	-	0	-	0	-	-	3		
Site of Care											
physician's office	-	0	17.0	8	-	1	-	4.9	72		
hospital clinic	-	0	-	2	-	0	-	7.6	20		
HMO/other	-	0	-	2	-	0	-	8.5	15		
community health center	-	0	-	5	-	0	-	5.1	11		
INFANT RISK FACTORS											
Congenital anomalies	-	0	-	0	-	0	-	-	4		
Abnormal conditions	-	0	-	3	-	0	-	23.5	32		
jaundice	-	0	-	0	-	0	-	39.5	17		
Sex of infant: female	-	0	12.6	14	-	1	-	5.4	55		
Early gestational age	-	0	-	2	-	0	-	48.6	54		

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

Table 15a. Sociodemographic Characteristics of Mothers by Ethnicity: South Cove catchment area¹ 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
			Number	Cambodian		Vietnamese		Laotian			
	Percent ²			Percent	Number	Percent	Number	Percent	Number	Percent	Number
Births	100.0	1 812		100.0	544	100.0	833	100.0	44	100.0	33 904
SOCIODEMOGRAPHIC											
Age, in years											
<20	0.9	17		12.1	66	10.2	85	- ³	4	5.0	1 694
20-24	11.2	202		32.7	178	26.4	220	36.4	16	18.1	6 146
25-29	38.8	703		28.1	153	25.4	212	38.6	17	34.8	11 815
30-34	35.1	636		14.2	77	23.2	193	-	4	29.1	9 868
35-39	12.9	233		9.2	50	12.1	101	-	3	10.8	3 661
40 +	1.1	20		3.7	20	2.6	22	-	0	2.1	712
Education, grade ⁴											
<9	18.0	326		63.1	343	39.5	329	47.7	21	2.2	737
9-11	22.0	399		13.6	74	19.3	161	18.2	8	9.8	3 333
12	24.0	206		8.6	23	20.4	72	24.0	6	34.1	5 652
13 +	36.9	668		4.4	24	16.1	134	11.4	5	54.1	18 345
Marital status											
married	95.9	1 738		52.9	288	54.9	457	61.4	27	81.5	27 630
not married	4.1	74		47.1	256	45.1	376	38.6	17	18.5	6 274
MATERNAL/BIOLOGICAL											
Gravidity											
1	47.3	850		38.4	202	39.4	326	30.2	13	41.4	13 898
2-3	45.2	812		35.0	184	41.2	341	37.2	16	46.1	15 507
4 +	7.5	134		26.6	140	19.4	160	32.6	14	12.5	4 195
Smoking											
no	98.4	1 784		97.4	530	98.0	816	100.0	44	78.2	26 516
yes	1.6	28		2.6	14	2.0	17	-	0	21.8	7 390

¹ Includes: Chinatown (Census Tracts (CT) 701-702), South End (CT 703-712), Quincy (CT 4171-4182), Allston/Brighton (CT 001-008), Medford (CT 3391-3401), Malden (CT 3411-3419), North Dorchester (CT 901-924), South Dorchester (CT 1001-1011), Cambridge (CT 3521-3550), Somerville (CT 3501-3515), Jemise Plain (CT 1201-1207), Roslindale (CT 1101-1106), Hyde Park (CT 1401-1404), Brookline (CT 4001-4012), East Boston (CT 501-512), Randolph (CT 4201-4203), South Boston (CT 601-614), Chelsea (CT 1601-1607), Everett (CT 3421-3427), and Revere (CT 1701-1708).

² Percent based on column totals.

³ Calculations based on fewer than five events are excluded.

⁴ Women 20 years of age and older.

Table 15b. Perinatal Characteristics by Ethnicity: South Cove catchment area¹ 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ²	Number	Cambodian		Vietnamese		Laotian	Percent	Number	Percent	Number
			Percent	Number	Percent	Number					
Births	100.0	1 812	100.0	544	100.0	833	100.0	44	100.0	33 904	33 904
MATERNAL/BIOLOGICAL											
Maternal conditions present	23.8	431	21.7	118	22.8	190	22.7	10	28.0	9 467	9 467
hepatitis B carrier	5.1	92	3.5	19	4.2	35	.3	2	0.1	26	26
diabetes	2.2	39	-	4	1.9	16	-	0	1.6	544	544
anemia	2.1	38	2.8	15	2.4	20	-	3	2.1	715	715
Caesarean section	18.2	325	7.2	39	14.0	116	11.4	5	25.0	8 357	8 357
ACCESS TO CARE											
Adequacy of prenatal care	75.9	1 376	44.1	240	50.9	424	38.6	17	80.8	27 386	27 386
Payment source											
private	65.5	1 167	29.0	155	28.7	236	46.3	19	78.2	26 264	26 264
public	29.0	517	68.8	368	69.1	568	51.2	21	18.8	6 327	6 327
self	4.3	77	-	3	1.2	10	-	0	2.0	673	673
Site of care											
physician's office	33.0	595	18.3	98	22.2	183	23.3	10	61.1	20 619	20 619
hospital clinic	10.8	195	33.1	177	33.9	280	39.5	17	13.6	4 581	4 581
HMO/other	11.2	202	5.6	30	8.2	68	-	3	14.9	5 015	5 015
community health center	45.0	810	43.0	230	35.6	294	30.2	13	10.4	3 527	3 527
INFANT RISK FACTORS											
Congenital anomalies	3.3	60	1.3	7	1.8	15	-	1	4.0	1 345	1 345
Abnormal conditions	8.6	156	3.9	21	6.6	55	-	3	10.9	3 681	3 681
jaundice	4.7	85	1.1	6	3.0	25	-	0	4.2	1 413	1 413
Sex of infant: female	46.5	842	47.4	258	50.1	417	47.7	21	48.8	16 558	16 558
Early gestational age	4.8	83	7.9	39	8.1	65	-	5	5.5	1 822	1 822

¹ Includes: Chinatown (Census Tracts (CT) 701-702), South End (CT 703-712), Quincy (CT 4171-4182), Allston/Brighton (CT 001-008), Medford (CT 3391-3401), Malden (CT 3411-3419), North Dorchester (CT 901-924), South Dorchester (CT 1001-1011), Cambridge (CT 3521-3550), Somerville (CT 3501-3515), Jamaica Plain (CT 1201-1207), Roslindale (CT 1101-1106), Hyde Park (CT 1401-1404), Brookline (CT 4001-4012), East Boston (CT 501-512), Randolph (CT 4201-4203), South Boston (CT 601-614), Chelsea (CT 1601-1607), Everett (CT 3421-3427), and Revere (CT 1701-1708).

² Percent based on column totals.

³ Calculations based on fewer than five events are excluded.

Table 16a. Low Birthweight and Sociodemographic Characteristics of Mothers by Ethnicity: South Cove catchment area¹ 1987-1990

	CHINESE			SOUTHEAST ASIAN			WHITE NON-HISPANIC		
	Cambodian		Number	Vietnamese		Number	Leotian		Number
	Percent ²	Percent		Percent	Percent		Percent	Percent	
Low birthweight infants	3.7	7.2	67	6.6	3.3	55	7.2	5.5	1 856
SOCIODEMOGRAPHIC									
Age, in years									
<20	-	-	0	11.8	-	10	-	7.2	122
20-24	4.5	9.6	9	6.4	-	14	-	5.5	339
25-29	4.3	6.0	30	8.0	-	17	-	5.1	604
30-34	2.7	-	17	4.2	-	8	-	5.3	519
35-39	4.7	-	11	-	-	3	-	5.9	214
40+	-	-	0	-	-	3	-	8.2	58
Education, grade ⁴									
<9	2.8	6.4	9	6.7	-	22	-	9.8	72
9-11	4.5	8.1	18	6.8	-	11	-	8.1	269
12	2.9	-	6	-	-	3	-	6.1	342
13+	3.4	-	23	4.6	-	6	-	4.5	831
Marital status									
married	3.8	7.7	65	5.9	-	27	-	4.8	1 309
not married	-	6.6	2	7.5	-	28	-	8.8	547
MATERNAL/BIOLOGICAL									
Gravidity									
1	3.3	6.9	28	8.0	-	26	-	5.4	746
2-3	4.2	7.1	34	5.0	-	17	-	5.1	789
4+	3.8	6.5	5	7.6	-	12	-	7.2	302
Smoking									
no	3.7	7.0	65	6.6	-	54	-	4.6	1 228
yes	-	-	2	-	-	1	-	8.5	628

¹ Includes: Chinatown (Census Tracts (CT) 701-702), South End (CT 703-712), Quincy (CT 4171-4182), Allston/Brighton (CT 001-008), Medford (CT 3391-3401), Melden (CT 3411-3419), North Dorchester (CT 901-924), South Dorchester (CT 1001-1011), Cambridge (CT 3521-3550), Somerville (CT 3501-3515), Jamaica Plain (CT 1201-1207), Roslindale (CT 1101-1106), Hyde Park (CT 1401-1404), Brookline (CT 4001-4012), East Boston (CT 501-512), Randolph (CT 4201-4203), South Boston (CT 601-614), Chelsea (CT 1601-1607), Everett (CT 3421-3427), and Revere (CT 1701-1708).

² Percent based on column totals.

³ Calculations based on fewer than five events are excluded.

⁴ Women 20 years of age and older.

Table 16b. Low Birthweight and Perinatal Characteristics by Ethnicity: South Cove catchment area¹ 1987-1990

	CHINESE				SOUTHEAST ASIAN				WHITE NON-HISPANIC			
			Cambodian		Vietnamese		Laotian					
	Percent ²	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Low birthweight infants	3.7	67	7.2	39	6.6	55	.3	2	5.5	1 856		
MATERNAL/BIOLOGICAL												
Maternal conditions present	8.4	36	15.2	18	15.9	30	-	2	11.3	1 067		
hepatitis B carrier	-	2	-	1	-	3	-	0	-	2		
diabetes	-	0	-	0	-	1	-	0	4.4	24		
anemia	-	3	-	0	-	2	-	0	11.0	78		
Caesarean section	7.1	23	12.8	5	8.6	10	-	1	9.2	768		
ACCESS TO CARE												
Adequacy of prenatal care	3.6	49	8.4	20	7.1	30	-	1	5.0	1 372		
Payment source												
private	3.3	39	11.0	17	8.0	19	-	2	4.8	1 259		
public	4.3	22	4.9	18	5.8	33	-	0	8.0	502		
self	-	4	-	0	-	0	-	0	6.3	42		
Site of Care												
physician's office	4.4	26	14.3	14	10.4	19	-	2	4.7	966		
hospital clinic	5.6	11	6.2	11	6.1	17	-	0	8.9	405		
HMO/other	-	4	-	3	-	2	-	0	5.1	255		
community health center	3.1	25	4.8	11	5.2	15	-	0	6.0	210		
INFANT RISK FACTORS												
Congenital anomalies	8.9	5	-	0	-	3	-	0	11.5	153		
Abnormal conditions	14.1	22	33.3	7	24.1	13	-	0	17.7	650		
jaundice	10.6	9	-	0	28.0	7	-	0	22.4	316		
Sex of infant: female	4.2	35	10.1	26	7.9	33	-	1	6.0	990		
Early gestational age	30.1	25	20.5	8	30.2	19	-	1	48.7	884		

¹ Includes: Chinatown (Census Tracts (CT) 701-702), South End (CT 703-712), Quincy (CT 4171-4182), Allston/Brighton (CT 001-008), Medford (CT 3391-3401), Malden (CT 3411-3419), North Dorchester (CT 901-924), South Dorchester (CT 1001-1011), Cambridge (CT 3521-3550), Somerville (CT 3501-3515), Jamaica Plain (CT 1201-1207), Roslindale (CT 1101-1106), Hyde Park (CT 1401-1404), Brookline (CT 4001-4012), East Boston (CT 501-512), Randolph (CT 4201-4203), South Boston (CT 601-614), Chelsea (CT 1601-1607), Everett (CT 3421-3427), and Revere (CT 1701-1708).

² Percent based on column totals.

³ Calculations based on fewer than five events are excluded.

Table 17a. Sociodemographic Characteristics of Mothers by Ethnicity: Worcester 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
			Number	Cambodian		Vietnamese		Laotian			
	Percent ¹			Percent	Number	Percent	Number	Percent	Number	Percent	Number
Births	100.0		52	100.0	37	100.0	311	100.0	31	100.0	8 250
SOCIODEMOGRAPHIC											
Age, in years											
<20	.2		0	16.2	6	19.3	60	-	4	10.1	834
20-24	11.5		6	43.2	16	33.8	105	58.1	18	25.3	2 090
25-29	40.0		21	21.6	8	25.1	78	-	4	35.2	2 900
30-34	36.5		19	-	4	12.5	39	-	2	22.2	1 833
35-39	11.5		6	-	2	7.1	22	-	1	6.4	531
40+	-		0	-	1	2.2	7	-	2	0.8	62
Education, grade ³											
<9	-		1	35.1	13	38.6	120	29.0	9	2.1	172
9-11	9.6		5	29.7	11	22.2	69	-	3	15.4	1 268
12	34.8		8	-	1	16.7	18	-	3	32.0	1 265
13+	61.5		32	-	2	8.7	27	-	2	48.2	3 977
Marital status											
married	98.1		51	24.3	9	49.0	153	62.7	21	75.0	6 191
not married	-		1	75.7	28	51.0	158	32.3	10	25.0	2 059
MATERNAL/BIOLOGICAL											
Gravidity											
1	58.0		29	62.9	22	46.6	138	44.4	12	40.0	3 239
2-3	40.0		20	28.6	10	34.8	103	37.0	10	47.7	3 892
4+	-		1	-	3	18.6	55	18.5	5	12.7	1 035
Smoking											
no	96.2		50	100.0	37	97.4	303	100.0	31	72.8	6 010
yes	-		-	-	0	2.6	8	-	0	27.2	2 240

¹ Percent based on column totals.

² Calculations based on fewer than five events are excluded.

³ Women 20 years of age and older.

Table 17b.

Perinatal Characteristics by Ethnicity: Worcester 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number	Cambodian		Vietnamese		Laotian	Percent	Number	Percent	Number
			Percent	Number	Percent	Number					
Births	100.0	52	100.0	37	100.0	311	100.0	31	100.0	8 250	
MATERNAL/BIOLOGICAL											
Maternal conditions present	23.1	12	18.9	7	29.3	91	29.0	9	23.7	1 957	
hepatitis B carrier	2	1	-	1	7.4	23	-	1	.1	5	
diabetes	-	3	-	0	1.9	6	-	0	1.5	126	
anemia	-	0	-	2	-	1	-	1	0.6	54	
Caesarean section	21.6	11	-	2	8.7	27	-	0	21.3	1 757	
ACCESS TO CARE											
Adequacy of prenatal care	78.8	41	40.5	15	61.1	190	54.8	17	84.3	6 954	
Payment source											
private	76.5	39	-	4	32.2	100	48.4	15	74.3	6 102	
public	19.6	10	86.5	32	65.3	203	51.6	16	23.5	1 927	
self	-	2	-	1	1.9	6	-	0	1.8	152	
Site of care											
physician's office	52.9	27	27.0	10	24.3	75	25.8	8	64.0	5 265	
hospital clinic	13.7	7	43.4	16	39.8	123	19.4	6	14.3	1 179	
HMO/other	21.6	11	-	2	35.6	110	25.8	8	16.8	1 381	
community health center	11.8	6	24.3	9	19.4	60	29.0	9	4.8	398	
INFANT RISK FACTORS											
Congenital anomalies	-	0	-	2	1.9	6	-	1	1.2	99	
Abnormal conditions	-	0	-	0	2.2	7	-	1	2.1	172	
jaundice	-	0	-	0	-	0	-	0	0.2	6	
Sex of infant: female	51.9	27	35.1	13	47.6	148	54.8	17	48.8	4 027	
Early gestational age	-	3	16.7	6	10.0	31	-	3	8.4	528	

¹ Percent based on column totals.² Calculations based on fewer than five events are excluded.

Table 18a. Low Birthweight and Sociodemographic Characteristics of Mothers by Ethnicity: Worcester 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number	Percent	Cambodian	Vietnamese	Laotian		Percent	Number	Percent	Number
Low birthweight infants	-. ²	4	13.5	5	9.0	28	-	5.8	0	480	
SOCIODEMOGRAPHIC											
Age, in years											
<20	-	0	-	1	10.0	6	-	9.1	0	76	
20-24	-	0	-	0	6.7	7	-	5.3	0	111	
25-29	-	0	-	3	10.3	8	-	5.7	0	166	
30-34	-	0	-	1	-	4	-	5.3	0	97	
35-39	-	0	-	0	-	2	-	4.7	0	25	
40+	-	0	-	0	-	1	-	8.1	0	5	
Education, grade ³											
<9	-	0	-	2	8.3	10	-	10.5	0	18	
9-11	-	0	-	2	7.3	5	-	9.6	0	121	
12	-	2	-	0	-	1	-	6.9	0	87	
13+	-	2	-	0	-	3	-	4.1	0	164	
Marital status											
married	-	4	-	1	7.2	11	-	4.6	0	286	
not married	-	0	-	4	10.8	17	-	9.4	0	194	
MATERNAL/BIOLOGICAL											
Gravidity											
1	-	4	-	3	12.3	17	-	6.1	0	197	
2-3	-	0	-	2	4.9	5	-	5.2	0	203	
4+	-	0	-	0	10.9	6	-	7.4	0	77	
Smoking											
no	-	4	13.5	5	8.6	26	-	4.6	0	276	
yes	-	0	-	0	-	2	-	9.1	0	204	

¹ Percents based on column totals.² Calculations based on fewer than five events are excluded.³ Women 20 years of age and older.

Table 18b.

Low Birthweight and Perinatal Characteristics by Ethnicity: Worcester 1987-1990

	CHINESE			SOUTHEAST ASIAN				WHITE NON-HISPANIC			
	Percent ¹	Number	Percent	Cambodian	Vietnamese	Laotian		Percent	Number	Percent	Number
Low birthweight infants	- ²	4	13.5	5	9.0	28	-	0	5.8	480	
MATERNAL/BIOLOGICAL											
Maternal conditions present	-	1	-	1	8.8	8	-	0	12.3	240	
hepatitis B carrier	-	0	-	0	-	1	-	0	-	0	
diabetes	-	0	-	0	-	0	-	0	4.8	6	
anemia	-	0	-	0	-	0	-	0	22.2	12	
Caesarean section	-	0	-	0	-	4	-	0	9.8	172	
ACCESS TO CARE											
Adequacy of prenatal care	-	4	-	3	9.5	18	-	0	5.3	368	
Payment source											
private	-	2	-	0	10.0	10	-	0	4.9	297	
public	-	1	-	4	8.3	17	-	0	8.6	166	
self	-	1	-	1	-	0	-	0	7.2	11	
Site of Care											
physician's office	-	1	-	0	5.3	4	-	0	5.0	266	
hospital clinic	-	2	31.3	5	12.2	15	-	0	11.1	131	
HMO/other	-	1	-	0	11.8	6	-	0	4.4	61	
community health center	-	0	-	0	-	2	-	0	5.3	21	
INFANT RISK FACTORS											
Congenital anomalies	-	0	-	0	-	0	-	0	17.4	17	
Abnormal conditions	-	0	-	0	-	2	-	0	39.2	67	
jaundice	-	0	-	0	-	0	-	0	-	1	
Sex of infant: female	-	3	-	2	11.5	17	-	0	6.1	245	
Early gestational age	-	2	-	1	29.0	9	-	0	46.9	247	

¹ Percents based on column totals.² Calculations based on fewer than five events are excluded.

APPENDIX III

TECHNICAL NOTES



Limitations of small numbers:

Cells in some tables in this publication, and particularly those tables specific to individual cities and towns, contain small numbers. Rates and proportions based upon less than five observations are suppressed, and trends based upon small numbers should be interpreted cautiously.

Differences with previously published data:

Numbers and rates in this publication may differ slightly from those contained in previous reports because of updates of birth certificate files.

Self-reported data:

Many items of data used in this publication, such as number of prenatal care visits and health insurance coverage, are self-reported, and are subject to the usual limitations of this type of information.

Logistic regression analysis:

Regression analysis is a statistical technique that can be used to develop a mathematical equation describing how two or more variables are related. Independent variables (also known as predictor or explanatory variables) are used in the model to predict or explain a dependent variable (also known as the response or outcome variable). In Chapter 6, several different regression models are used. The independent variables are education, smoking, and adequacy of care; low birthweight is the dependent variable. Logistic regression is a special type of regression analysis where the dependent variable is dichotomous. In this report, a delivery is either low birthweight or normal birthweight; thus, a logistic regression model is used. The value of using a logistic regression model is that it allows us to hypothetically compare the impact of different variables in different ethnic groups on low birthweight. For instance, we can answer questions such as: what would the rate of low birthweight be among Chinese mothers if they smoked as much as white non-Hispanic women? Or, what would the rate of low birthweight be for Cambodian women if they used prenatal care at the level of white non-Hispanic mothers?

(References: Hosmer DW and Lemeshow S, *Applied Logistic Regression*, John Wiley and Sons, 1989; SAS Institute *SAS/STAT User's Guide, Version 6, Fourth Edition, Volume 2*, 1990)

Glossary

Adequacy of Prenatal Care

The Index of Adequacy of Prenatal Care (based on the Kessner Index) has five categories (adequate, intermediate, inadequate, no prenatal care, and unknown), based on the trimester in which prenatal care began and the number of prenatal visits. The general classification scheme is as follows:

CATEGORY	TRIMESTER CARE BEGAN	NUMBER OF VISITS
Adequate	1	9 or more
Intermediate	1	5 - 8
	2	5 or more
Inadequate	1	1 - 4
	2	1 - 4
	3	1 or more
No Prenatal Care	-	0
Unknown	unknown	unknown

This classification is adjusted for gestational age to allow for proper classification of premature births.

Anemia

Hemoglobin level of less than 13.0g/dL, or a hemocrit of less than 39%.

Birthweight

The weight of an infant recorded at the time of delivery. It may be recorded in either pounds/ounces or grams. If recorded in pounds/ounces, it is converted to grams for use in this report.

1 pound = 453.6 grams; 1,000 grams = 2 pounds and 3 ounces

Birthweight Categories

Low birthweight (LBW): An infant's weight of less than 2,500 grams (5.5 pounds) recorded at birth.

Very low birthweight (VLBW): An infant's weight of less than 1,500 grams (3.3 pounds) recorded at birth.

Breastfeeding

Mother was or was intending to breastfeed at the time the birth certificate was completed.

Caesarean Section or C-Section

The percentage of Caesarean births is not adjusted for risk factors such as mother's age, birthweight, or complications of labor and delivery, which could influence the number of procedures. Caution should be used when comparing unadjusted percentages.

Diabetes

Metabolic disorder characterized by excessive discharge of urine and persistent thirst; includes juvenile onset, adult onset, and gestational diabetes during pregnancy.

Early Gestational Age

Infants born before the mother completed the 37th week of pregnancy.

Education

Based on information provided on the birth certificate by the mother.

Ethnicity

See Race.

Foreign-Born Mother

Women not born in the United States, its possessions or protectorates.

Gravidity

The sum of the number of prior live births now living, the number of live births now dead, and the current child born.

Healthy Start

A Massachusetts-funded program providing services and financing for prenatal care to low-income pregnant women who lack health insurance, but do not qualify for Medicaid.

Live Birth

A live birth is any infant who breathes or shows any other evidence of life (such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles) after separation from the mother's uterus, regardless of the duration of gestation.

Low Birthweight (LBW)

See Birthweight.

Private Insurance

Blue Cross/Blue shield, commercial insurance, and health maintenance organizations.

Public

Medicaid, Medicare, Healthy Start and other government. Healthy Start is a Massachusetts-funded program providing services and financing for prenatal care to low-income women.

Race

For data presented in this publication, race of the infant is coded race of the mother according to the standards promulgated by the National Center for Health Statistics. Ethnicity is coded to one of forty-one categories reported by the mother on the birth certificate.

Resident Birth

Births presented in all tables are resident live births. The birth of an infant whose mother reports her usual place of residence is in Massachusetts. In Massachusetts, a resident is a person with a permanent address in one of the 351 cities or towns. Vital statistics data may be presented in terms either of residence or occurrence. All data in this publication, except information on Caesarean delivery by hospital, are resident data. Resident data include all events that occur to residents of the Commonwealth, wherever they occur. Occurrence data include all events that occur within the state, whether to residents or nonresidents. There is an exchange agreement among the 50 states, District of Columbia, Puerto Rico, Virgin Islands, Guam, and Canada that provides for exchange of copies of birth and death records. These records are used for statistical purposes only, and allow each state or province to track the births and deaths of its residents.

Smoking

Based on information provided on the birth certificate by the mother.

Very Low Birthweight (VLBW)

See Birthweight.

**SELECTED LIST
OF
REFERENCES**



- Baruffi G, Alexander G, Novotny R. Causes of infant mortality in a multiethnic population. *Asia Pac J Public Health*; 1990; 4 (2-3) p145-50.
- Cohen BB, Lederman RI, Friedman DJ. Do race and ancestry influence low birthweight?: Massachusetts Department of Public Health, Bureau of Health Statistics, Research and Evaluation. Presented at American Public Health Association annual meeting, New York; October 1990.
- Doornbos JP, Nordbeck HJ, Van Enk AE, Muller AS, Treffers PE. Differential birthweights and the clinical relevance of birthweight standards in a multiethnic society. *Int J Gynaecol Obstet*; Apr 1991; 34 (4) p319-24.
- Drew JH, Chan DP. Incidence of prematurity and low birth-weight in an immigrant Chinese population. *Aust N Z J Obstet Gynaecol*; Aug 1989; 29 (3 (Pt 2)) p303-5.
- Firdous R, Bhopal RS. Reproductive health of Asian women: a comparative study with hospital and community perspectives. *Public Health*; Jul 1989; 103 (4) p307-15.
- Gann P, Nghiem L, Warner S. Pregnancy characteristics and outcomes of Cambodian refugees. *Am J Public Health*; Sep 1989; 79 (9) p1251-7.
- Grether JK, Schulman J, Croen LA. Sudden infant death syndrome among Asians in California. *J Pediatr*; Apr 1990; 116 (4) p525-8.
- Helsel D, Petitti DB, Kunstadter P. Pregnancy among the Hmong: birthweight, age, and parity. *Am J Public Health*; Oct 1992; 82 (10) p1361-1364.
- King PA, Duthie SJ, Li DF, Ma HK. Obstetric outcome among Vietnamese refugees in Hong Kong: an age-matched case-controlled study. *Int J Gynaecol Obstet*; Nov 1990; 33 (3) p203-10.
- Kleinman JC. Infant mortality among racial/ethnic minority groups, 1983-84. *MMWR CDC Surveill Summ*; Jul 1990; 39 (3) p31-9.
- Li DK, Ni H, Schwartz Sm, Daling JR. Secular change in birthweight among Southeast Asian immigrants to the United States. *Am J Public Health*; June 1990; 80 (6) p685-688.
- Rumbaut RG, Weeks JR. Infant health among Indochinese refugees: patterns of infant mortality, birthweight and prenatal care in comparative perspective. In: *Research in the Sociology of Health Care*: JAI Press Inc.; 1989 Vol. 8: 137-196; ISBN: 1-55938-043-8.
- Schauberger CW, Hammes B, Steingraeber PH. Obstetric care of a Southeast Asian refugee population in a midwestern community. *J Perinatol*; Sep 1990; 10 (3) p280-4.

Ventura SJ, Martin JA. Advance Report of Final Natality Statistics. In Monthly Vital Statistics Report; USDHHS, PHS, CDC, NCHS; Feb 25, 1993; Vol. 41 (9), Supplement, p12, 42-43.

Viegas OA, Ratnam SS, Cole TJ. Ethnic and other factors affecting birthweight in Singapore. *Int J Gynaecol Obstet*; Aug 1989; 29 (4) p289-95.

Wang X, Strobino DM, Guyer B. Differences in cause-specific infant mortality among Chinese, Japanese, and White Americans. *Am J Epidemiology*; 1992; 135 (12) p1382-93.

Weeks JR, Rumbaut RG, Brindis C, Korenbrot CC, Minkler D. High fertility among Indochinese refugees. R01-HD15699. *Public Health Rep*; Mar-Apr 1989; 104 (2) p143-50.

Weeks JR, Rumbaut RG. Infant mortality among ethnic immigrant groups. MCJ-060551. *Soc Sci Med*; 1991; 33 (3) p327-34.

Yip R, Scanlon K, Trowbridge F. Improving growth status of Asian refugee children in the United States. *JAMA*; Feb 19 1992; 267 (7) p937-40.

Yip R, Li Z, Chong WH. Race and birth weight: the Chinese example. *Pediatrics*; May 1991; 87 (5) p688-93.

Yu E. The low mortality rates of Chinese infants: some plausible explanatory factors. *Soc Sci Med*; 1982; 16 p253-265.

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